



AlvariSTAR™

Installation Manual

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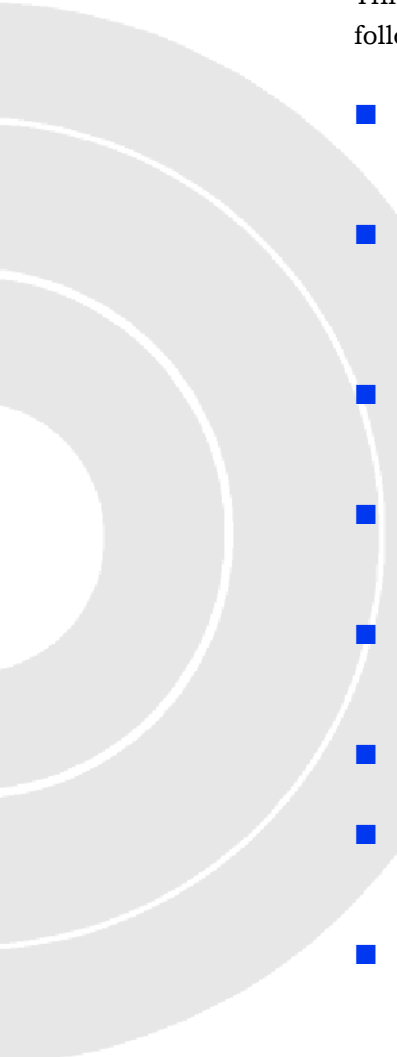
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About This Manual



This manual describes how to install the AlvariSTAR software and includes the following chapters:

- Chapter 1 - Introduction to Alvaristar Installation: Describes the AlvariSTAR architecture and the minimum system requirements.
- Chapter 2 - Pre-Installation Requirements: Provides details of information that must be available and procedures to be performed before starting the installation.
- Chapter 3 - Installation on Windows OS: Describes server and client installation on machines running Windows OS.
- Chapter 4 - Installation on Solaris OS: Describes how server installation on machines running Solaris OS.
- Chapter 5 - Post-Installation Tasks: Describes tasks to be performed after installation.
- Chapter 6- Running Applications: Describes how to run AlvariSTAR.
- Chapter 7 - System Maintenance: Describes procedures necessary for maintaining the system.
- Chapter 8 - Uninstalling AlvariSTAR: Describes how to remove AlvariSTAR from machines running either Windows or Solaris operating systems.

This manual uses the following conventions:

- Commands appear in special font: e.g., `mkdir/opt/AlvariSTAR`
- Names of buttons appear in Bold and names of windows in italics: e.g., Click **Next**. The *License Agreement* window appears.
- <Text> means that an actual value is to be entered instead of the text in between the angled brackets.



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Chapter 1 - Introduction to AlvariSTAR Installation

In This Chapter:

- “About AlvariSTAR” on page 2
- “AlvariSTAR Architecture” on page 3
- “Operating System” on page 5
- “Database” on page 6
- “Deployment Scenarios” on page 7
- “Minimum Requirements” on page 8

1.1 About AlvariSTAR

AlvariSTAR is a comprehensive, Carrier-Class Network Management System (NMS) for Alvarion Broadband Wireless Access (BWA) product based networks. It enables service providers to monitor, manage and optimize the operation and performance of Alvarion BWA networks.

1.2 AlvariSTAR Architecture

1.2.1 Functional Architecture

AlvariSTAR focuses on the Element Management System (EMS) and Network Management System (NMS) layers of Telecommunication Management Networks (TMN) to provide **FCAPS** management functions:

- **Fault Management** - Alarm observation including alarm and state report, correlation, suppression, alarm sorting, filtering and reports, alarm log, summarized alarms and acknowledgment, color coding and forwarding to upper level management systems.
- **Configuration Management** - Device discovery and scheduled periodical updates, hierarchical location and contacts management, single and multiple unit configuration and software upgrade, services provisioning, unit and board configuration, telephony and data service provisioning, logical and geographical topology views and inventory management.
- **Performance Management** - Monitoring of over-the-air traffic load, Device discovery and scheduled periodical updates, hierarchical location and contacts management, single and multiple unit configuration and software upgrade, services provisioning, unit and board configuration, telephony and data service provisioning, logical and geographical topology views and inventory management.
- **Security Management** - AlvariSTAR and subscriber security facilities including management users, user groups, functional permissions and passwords for multi-level authorizations and access protection.

AlvariSTAR multi-layer archi-functional architecture comprises an infrastructure layer providing common functionality including inventory, faults, topology, log and reports, SW download, performance monitoring and security. The Device Drivers layer enables to add management, configuration and service provisioning capabilities that may differ among various BWA product families. The common infrastructure can be integrated with either one or several Device Drivers, according to need.

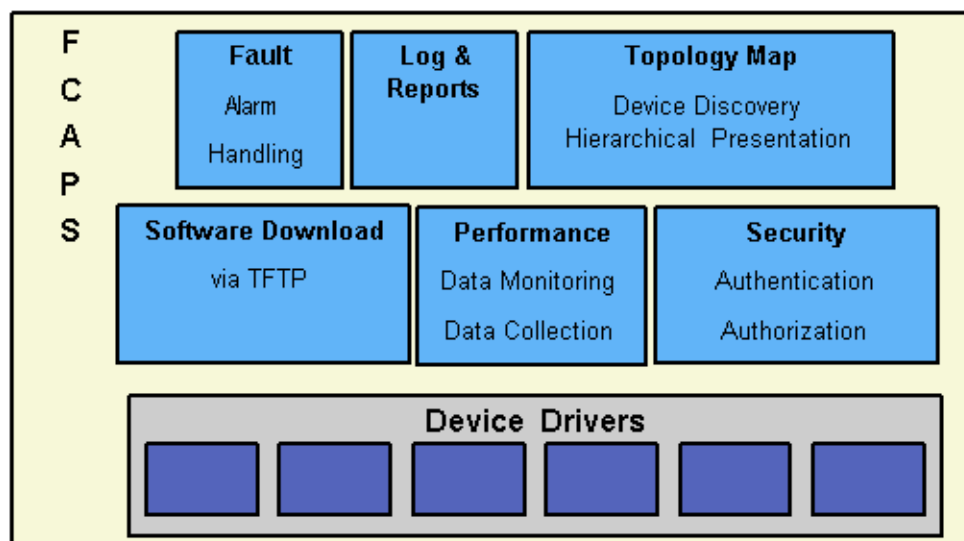


Figure 1-1: AlvariSTAR Architecture

1.2.2 AlvariSTAR Basic Components

AlvariSTAR is an N-Tier type system that can be divided into three major sub-systems:

- **Application Server** - The Application Server, which typically runs on a dedicated server, enables the system to process incoming events and communicate with equipment and network devices.
- **Database Server** - The Database Server provides the centralized storage for all data in the AlvariSTAR application.
- **Client Application** – An end-user application with a Java based Graphical User Interface (GUI) that enables user access to AlvariSTAR management information and processes.

1.3 Operating System

AlvariSTAR can only be installed on machines with one of the following operating systems installed:

- **Microsoft Windows operating systems:** Windows XP Professional, Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, Windows 2003 Server.
- **SUN Solaris operating systems:** Solaris 9 or 10.

1.4 Database

MySQL and Oracle database installations are supported. The MySQL database installation is available only on Microsoft supported platforms and is integrated with the AlvariSTAR installation. In installations in which a Oracle database is to be used, the Oracle database must be acquired and installed separately.

1.5 Deployment Scenarios

AlvariSTAR is designed to work in networks of varying sizes. You can customize the system to work as an entry-level single server for a small deployment, or you can scale it out to manage a more complex deployment. AlvariSTAR's flexible design enables you to continuously change and scale the deployment as your network needs grow.

- **Entry Level (Single Server) Configuration** – The ideal solution for smaller network environments. In single server deployment, all sub-systems are installed on a single machine. The client application can be installed on additional computers to provide management access to the system from a number of locations. The client application is only supported on Microsoft platforms.
- **Distributed Configuration** – Suitable for most network environments. In a distributed configuration, the application and database servers can be installed on different machines in various combinations: for example, application server on one machine, database server on another machine, and client applications on additional machines.



NOTE

The application servers and database server must all run the same type of operating system. Combinations of different operating systems are not supported.

1.6 Minimum Requirements

The requirements for the machines vary depending on your network topology and installation configuration.

The minimum configuration of any system should be based on expected peak load and number of managed elements.

To view the most up-to-date requirements, download the latest Release Note from Alvarion's web site:

- 1** Visit Alvarion's web site at www.alvarion.com.
- 2** Go to the Customer Service area and select Product Support.
- 3** Enter your Username and Password and click Enter.
- 4** In the Product Support window:
 - a** Select Product Line: AlvariSTAR
 - b** Select Product Series
 - c** Select Topic: Operating Software Downloads
 - d** Click Go. Download the last Release Note from the list.

Chapter 2 - Pre-installation Procedures

Before beginning the AlvariSTAR installation, you will need to check that you have all the necessary information and that you have performed pre-installation procedures.

A data migration utility is available for migrating from AlvariSTAR Version 2.6 to Version 3.0. The data migration utility saves information, such as security settings, contacts, etc., that is stored in the database. The utility can be obtained from the Alvarion web site.

In This Chapter:

- [“Pre-Installation Check List” on page 10](#)
- [“Configuring the Network” on page 11.](#)
- [“Solaris OS Pre-installation Procedures” on page 14](#)
- [“Configuring the Oracle Database” on page 16](#)

2.1 Pre-Installation Check List

Before starting to install AlvariSTAR, contact the system administrator and verify the following information, depending on the type of installation mode:

2.1.1 Server Installation

- **Folder location:** Server installation requires 1.3GB disk space. Verify in which folder the software will be installed.
- **Server IP:** For systems with more than one NIC (network identity card) installed, verify the IP address on which the server will listen to client requests.
- **Root password:** For installations on Solaris OS, verify the root password.
- For installations using Oracle DB:
 - ◇ Verify the Oracle server URL (host or IP, port, SID)
 - ◇ Verify the Oracle system password
 - ◇ Define the name for the AlvariSTAR scheme.
 - ◇ Define the password for the AlvariSTAR scheme. Follow the Oracle password policy.

2.1.2 Client Installation

- **Folder location:** Client installation requires 0.5 GB disk space. Verify in which folder the software will be installed.
- **Server IP:** Verify the server IP address.
- **Partition Name:** Verify the partition name of the server.

2.2 Server Installation on Windows OS

- The computer on which the server is installed must meet minimal hardware and software requirements. For further information refer to the Release Notes.
- The computer should be dedicated to running AlvariSTAR.
- Uninstall any previous versions of AlvariSTAR that were installed on the server.
- If MySQL is installed on the server, uninstall before proceeding with AlvariSTAR installation.
- Log in to the system with administrator privileges.
- If using Oracle DB, verify that the Oracle client is configured properly and that the AlvariSTAR can reach the Oracle server. See [Section 2.4](#) for more details.

2.2.1 Configuring the Network

AlvariSTAR must be installed on a machine with a valid network connection and a valid IP address.



IMPORTANT

As the license mechanism includes the IP and MAC address, it is essential that the IP address is a static address.

AlvariSTAR supports multiple NIC servers. Before starting installation, the user must choose which NIC the server will use to communicate with the clients. Due to the limitations of Windows, once selected, the NIC must be the first connection to appear in the connection list as it appears in the Windows operating system



To set the NIC order:

- 1 From the Windows Start menu, select *Control Panel—Network Connections (Network and Dialup Connections)*.
- 2 Select *Advanced Settings* from the Advanced menu in the toolbar at the top of the window.

- 3 Use the arrows to move the network card that you have selected to the top of the connections list in the *Adapters and Bindings* folder and click **OK**.

2.2.1.1 Configuring Network Ports

The following ports between the server machine and the managed network equipment must be open.

- TFTP — 69 (UDP)
- SNMP — 161, 162 (UDP)

Table 2-1 lists the ports used in the communication between the AlvariSTAR clients and application server. All files in the Configuration Option column are relative to the AlvariSTAR home folder on the designated machine.

Table 2-1: Network Ports Configuration

	Def.Port	Direction	Protocol	Configuration Option	Configure on
Bootstrap port	3100	Client to Server	TCP	<pre><mbean code="org.jboss.ha.jndi.HANamingService" name="jboss:service=HAJNDI"> <attribute name="Port">@NODE_NUM@3100</attribute></pre> in <code>oware/conf/cluster-service.xml</code> You should only configure this in conjunction with the discovery override property on the client. See the above section for details on the discovery process and the discovery override procedure.	App. Server
Naming Service	1099	Client to Server	TCP	<code>oware.listenport.appserver</code> in <code>oware/lib/owappserver.properties</code>	App. Server
HA RMI Port	User def	Client to Server	TCP	<pre><mbean code="org.jboss.ha.jndi.HANamingService" name="jboss:service=HAJNDI"> <attribute name="RmiPort">0</attribute></pre> in <code>oware/conf/cluster-service.xml</code> If left 0 (default) the server will bind to any port in the 0 - 65535 range.	App. Server
RMI Adaptor Port	User def	Client to Server	TCP	<pre><mbean code="org.jboss.jmx.adaptor.rmi.RMIAdaptorService" name="jboss.jmx:type=Connector,name=RMI"> <attribute name="RMIObjectPort">0</attribute></pre> in <code>oware/jboss-3.0.8/server/oware/deploy/jmx-rmi-adaptor.sar/META-INF/jboss-service.xml</code> If left 0 (default) the server will bind to any port in the 0 - 65535 range.	App. Server

Table 2-1: Network Ports Configuration

	Def.Port	Direction	Protocol	Configuration Option	Configure on
JRMP Invoker	4444	Client to Server	TCP	<pre><mbean code="org.jboss.invocation.jrmp.server.JRMPInvoker" name="jboss:service=invoker,type=jrmp"><attribute name="RMIObjectPort">4444</attribute></pre> in <code>oware/conf/jboss-root-service.xml</code>	App. Server
SoniqMQ Client Port	2506	Client to Server	TCP	<pre>com.dorado.jms_vendor.port.sonicmq</pre> in <code>oware/lib/owappserver.properties</code>	App. Server
RMI Port	User def	Client to Server	TCP	<pre><mbean code="org.jboss.naming.NamingService" name="jboss:service=Naming"> <attribute name="RmiPort">0</attribute></pre> in <code>oware/conf/jboss-root-service.xml</code> If left 0 (default) the server will bind to any port in the 0 - 65535 range.	App. Server

2.3 Solaris OS Pre-installation Procedures



NOTE

It is recommended to create a distinct user (e.g. *alvari*) for the installation (and ownership) of the AlvariSTAR installation.

Install the patches specified in this section on all Solaris machines on which AlvariSTAR system components will be installed.

- The installation software and runtime environment use standard Sun Solaris JDK which requires a minimum set of patches to be installed onto Solaris in order to run.
- The patch cluster can be downloaded from:
<http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage>
- Additional patches for a particular machine can be downloaded from Sun via the PatchPro Expert Applet (<http://patchpro.sun.com/>).
- Select the Solaris version from the *Operating System Release* dropdown menu and read the README file or download the cluster of patches.
- Install the patches using the **patchadd(1M)** utility according to the instructions given in **patchadd(1M)** as well as in the Solaris AnswerBook.



NOTE

AlvariSTAR requires, and ships with, JDK 1.5.1.

2.3.1 Limitations and Special Notes for Installation on Solaris OS

Due to a bug in Sun Solaris JDK (bugid 4281163), the AlvariSTAR installation process requires access to a Sun X11 environment, even in cases when no Java graphics are displayed. To provide X11 access, do one of the following:

- 1 Install the software on a Solaris system with a graphics card, monitor and X Window System.
- 2 Install the software on a Solaris system remotely from a machine that is running X Window System (e.g. another Solaris workstation, X Window on

Linux or Windows with X Window Server) - Make sure “xhost +” has been run on the target Solaris server in order to allow connections from X Terminals.

2.3.2 Creating an Installation Folder

Before installing AlvariSTAR you must create an installation folder to host the installation and make sure the designated user has full rights on it. The default folder is /opt/AlvariSTAR). Before creating the folder, make sure that you know the user name and group of the user who will install AlvariSTAR.

- 1 Log in as user root.
- 2 Enter the following command to create the folder:

```
mkdir/opt/AlvariSTAR
```

- 3 Enter the following command to change the owner type of the folder:

```
chown <user>:<group> /opt/AlvariSTAR
```

where <user> and <group> are the actual names defined for the user installing AlvariSTAR.

- 4 Enter the following command to verify the user's rights:

```
ls -ld /opt/AlvariSTAR
```

The owner is displayed in the third and forth columns.



NOTE

In order to log in as user root, enter: SU - followed by the root password from any Telnet/terminal session.

- 5 Log out from user root.

2.4 Configuring the Oracle Database



NOTE

The Oracle database should be installed separately according to the installation instructions provided by Oracle before installing the AlvariSTAR software.

The Oracle Database Configuration procedure consists of:

- 1 Installing the Oracle software on the Oracle DB Server, according to the instructions provided by Oracle.
- 2 Performing additional configuration instructions as described in this chapter.
- 3 For machines on which the AlvariSTAR Application Server will be installed:
 - ◇ Installing Oracle Client software including: SQLNet8, sqlplus, and JDBC driver.
 - ◇ Performing additional configuration procedures.

2.4.1 Installing and Running the Oracle Database

- 1 Install the Oracle software on the Oracle DB Server, according to the instructions provided by Oracle.
- 2 Create an Oracle DB to be used by AlvariSTAR (instance). Make sure the created instance runs.
- 3 Install **Oracle Client** software including **SQLNet8**, **sqlplus**, and **JDBC** driver on the machine on which the Application Server is installed.
- 4 Configure the **Oracle TNS** service using Oracle Net8 Configuration Assistant or by manually editing the `%ORACLE_HOME%/network/admin/tnsnames.ora` file. Make sure that the local service name for the database is identical to the SID (System Identifier) of the database on the database server.
- 5 On the database server, check the Oracle initialization parameters in the file `init<InstanceSID>.ora`. AlvariSTAR will usually work with the default database settings. For larger deployments and fine tuning alter the initialization file and make sure that the minimums below are met. We recommend checking all modifications to these files with your Oracle DBA.

`shared_pool_reserved_size = 12 MB`

`shared_pool_size = 256 MB`

```
open_cursors = 300  
processes = 150  
job_queue_processes = 10  
sort_area_size = 524 KB  
sort_area_retained_size = 0  
db_cache_size = 752 MB  
large_pool_size = 144 MB  
java_pool_size = 24 MB
```

**NOTE**

These are guidelines. For large deployments we recommend that a qualified DBA fine tune the DB instance parameters.

2.4.2 Defining the Required Environment Variables

If you are working on a Windows machine, skip to [Section 2.4.3](#).

In order for AlvariSTAR to run with Oracle, several Oracle related environment variables need to be set for the user installing AlvariSTAR on the Oracle client machine. If you are using `/bin/sh` or `/bin/bash`, edit the `.profile` file in its home directory.

The following environment variables should be set in order to run AlvariSTAR with Oracle:

- ORACLE_HOME
- PATH
- LD_LIBRARY_PATH

The following instructions assume that Oracle client has been installed in the `/opt/oracle` folder.

```
ORACLE_HOME=/opt/oracle
```

```
PATH=$ORACLE_HOME/bin:/usr/bin:/etc:/usr/ccs/bin:/usr/openwin/bin  
: $PATH
```

```
LD_LIBRARY_PATH=$ORACLE_HOME/lib32:/usr/local/lib:$LD_LIBRARY_PATH
```

```
export ORACLE_HOME
```

```
export PATH
```

```
export LD_LIBRARY_PATH
```

If using `/bin/csh` edit the `.cshrc` file in the user home directory:

```
setenv ORACLE_HOME /opt/oracle
```

```
setenv PATH $ORACLE_HOME/bin:/usr/bin:/etc:/usr/ccs/bin:/usr/openwin/bin:$PATH
```

```
setenv LD_LIBRARY_PATH $ORACLE_HOME/lib32:/usr/local/lib:$LD_LIBRARY_PATH
```

2.4.3 Testing Oracle Client Connectivity

To test connectivity to the database server from the AlvariSTAR machine, use the *sqlplus* utility as follows:

- 1 Assuming that the database SID is *testme*, switch to the command prompt and enter the following command:

```
sqlplus system@testme
```

You will be prompted for the password for the user system. If the SQL prompt is displayed, connectivity to the database server is confirmed. Any error message should be reported to and resolved by the DBA.

- 2 Enter exit or quit to complete the procedure.

Chapter 3 - Installation on Windows OS

This chapter describes how to install AlvariSTAR on Windows operating systems.

In This Chapter:

- [“Overview” on page 22.](#)
- [“Steps Common to All Installation Procedures” on page 23.](#)
- [“Server Installation” on page 26.](#)
- [“Client Installation” on page 35.](#)

3.1 Overview

AlvariSTAR comprises a number of components which can be installed and run on a single machine, or installed and run on separate machines in various combinations as independent processes.



NOTE

Before starting installation, verify that you have all the necessary information and that you have carried out all the necessary procedures as outlined in [Chapter 2](#).

You can select one of the following installation options:

- **Server** – Used for Entry Level Single-server configurations. It installs all the system components (Application Server, Database Server, and Client Application) on the same host.
- **Client** – Used to install the Client software on additional machines. The installation does not configure the machine to run the Application Server or Database Server.

Some of the steps (described in the following section) are common to all installations, while others differ according to the installation option selected and are detailed in their respective sections.



NOTE

All the installation steps are saved in a log file <INSTALL_ROOT> AlvariSTAR_InstallLog.log.

3.2 Steps Common to All Installation Procedures

- 1 Log in to the computer on which the installation is to be performed as a user with administrator privileges.
- 2 To begin the installation:
 - ◇ Double-click the **install.exe** file directly from the AlvariSTAR Install CD; OR
 - ◇ For FTP installations, copy the AlvariSTAR directory to your hard-drive and click **install.exe**.
 - ◇ The install.exe file can be found at Disk1\InstData\Windows\VM\



CAUTION

When copying or downloading the installation kit to a local disk, make sure you copy the entire content of the kit - not only the install.exe file.

InstallAnywhere is activated.

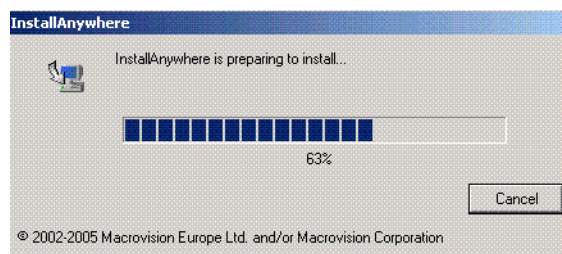


Figure 3-1: InstallAnywhere Initialization

- 3 Wait until InstallAnywhere has completed the initialization. An *Introduction* window appears.



NOTE

During installation, a console screen is displayed in the background behind the installation windows. This screen does not require user intervention and should be ignored.

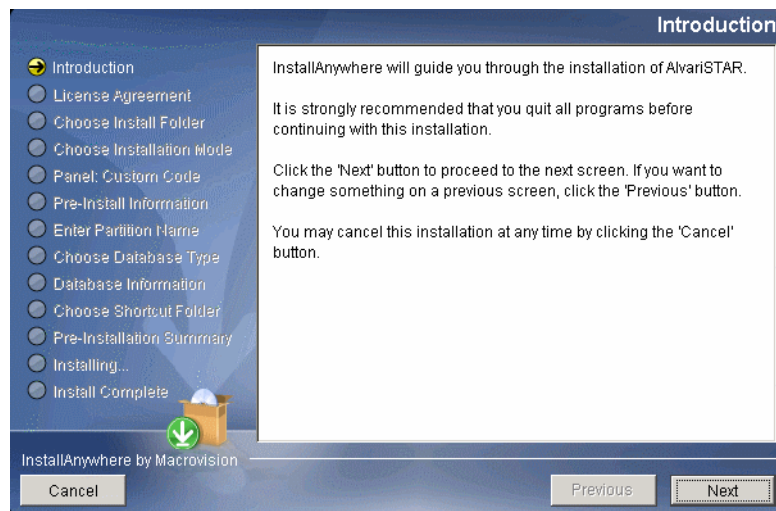


Figure 3-2: Introduction Window

- 4 Review the information and click **Next**.

The *License Agreement* window appears.

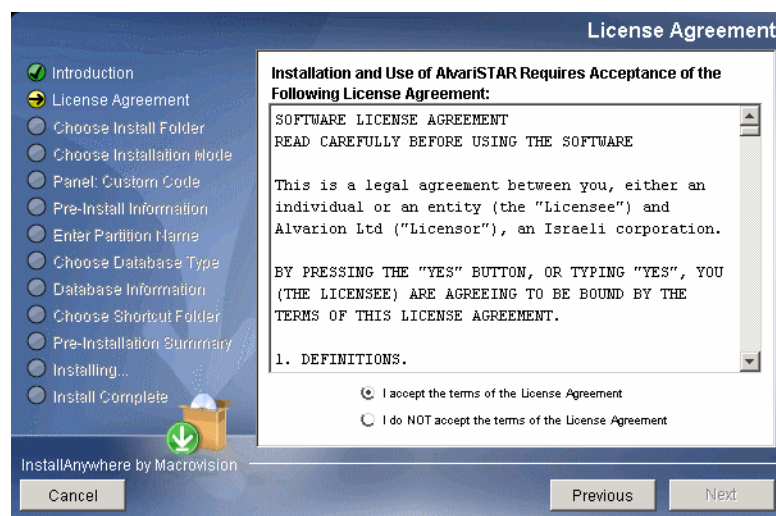


Figure 3-3: License Agreement Window

- 5 Accept the terms of the license agreement and click **Next**.

The *Choose Install Folder* window appears.

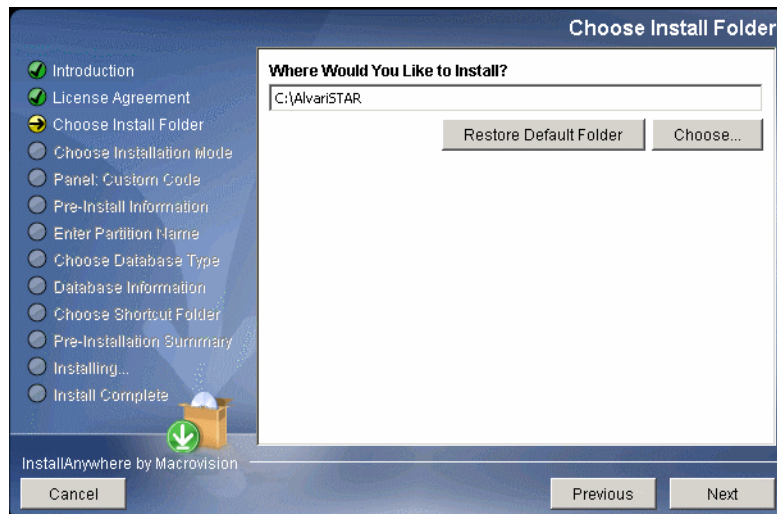


Figure 3-4: Choose Install Folder Window

- 6 To accept the default destination folder, click **Restore Default Folder**. To change the directory: either enter the complete path (if the directory does not exist, it will be created automatically by the system) or click **Choose** to locate an existing directory and click **Next**. The *Choose Installation Mode* window appears.

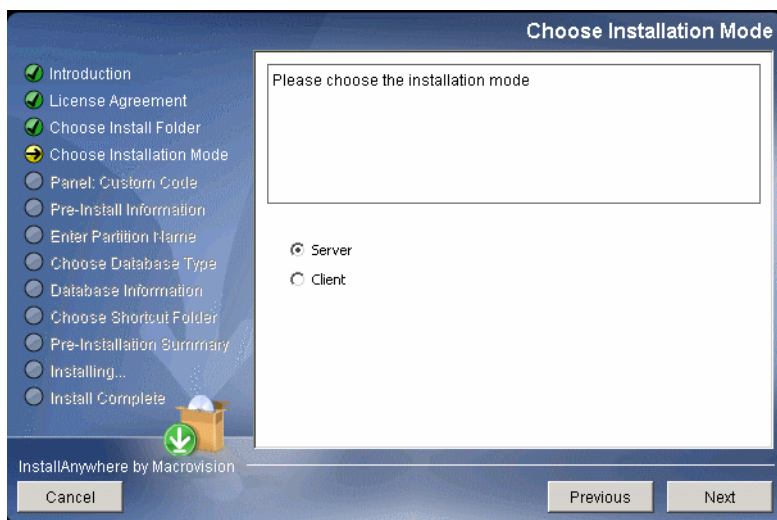


Figure 3-5: Choose Installation Mode Window

- 7 Choose the installation mode and click **Next**.

3.3 Server Installation

It is assumed that you have performed all the steps described in [Section 3.2](#), until the *Choose Installation Mode* window.

NOTE



When **Server** installation is selected the Application Server, Database Server and Client Application are installed.

- 1 In the *Choose Installation Mode*, select **Server** and click **Next**. The *Select Server IP* window appears.

NOTE



If there is more than one NIC (network interface card) installed in the system, a list of the IP addresses for each NIC appears in the *Select Server IP* window. Make sure that the selected IP is setup as described in [Section 2.1.1](#).

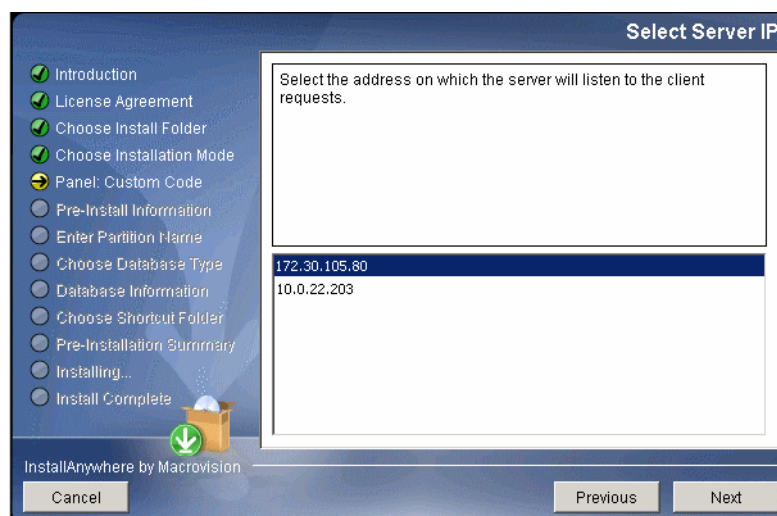


Figure 3-6: Select Server IP Window

- 2 Select the IP address on which the server will listen to client requests and click **Next**.

The *Enter Partition Name* window appears.

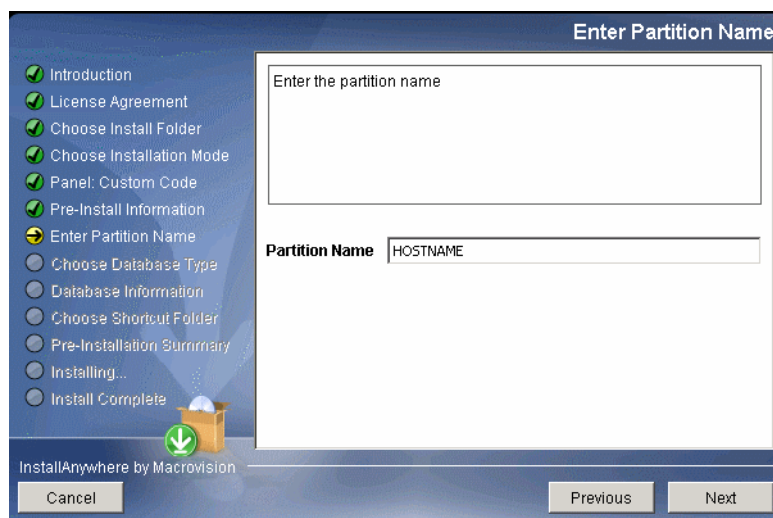


Figure 3-7: Enter Partition Name Window

- 3 Specify a **Partition Name** for the server (by default, the system displays the host name in capital letters). Verify that it is *unique* in the network (the partition name is CASE sensitive). All other AlvariSTAR system elements will refer to this name. Click **Next**.

The *Choose Database Type* window appears.

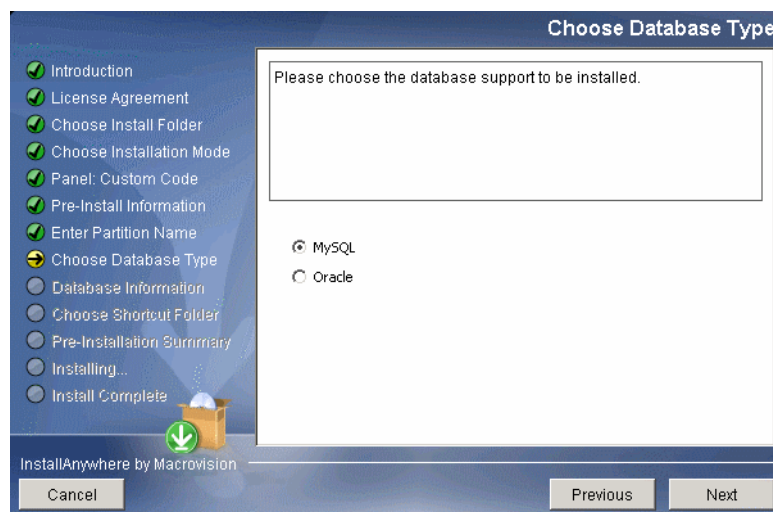


Figure 3-8: Choose Database Type Window

- 4 Select the database support to be installed and click **Next**.

3.3.1 Installation with MySQL



NOTE

The MySQL database installation is integrated with the AlvariSTAR installation and does not require any special configuration or preparation.

- 1 Select **MySQL** from the *Choose Database Type* window and click **Next**.

The *Choose Shortcut Folder* window appears.

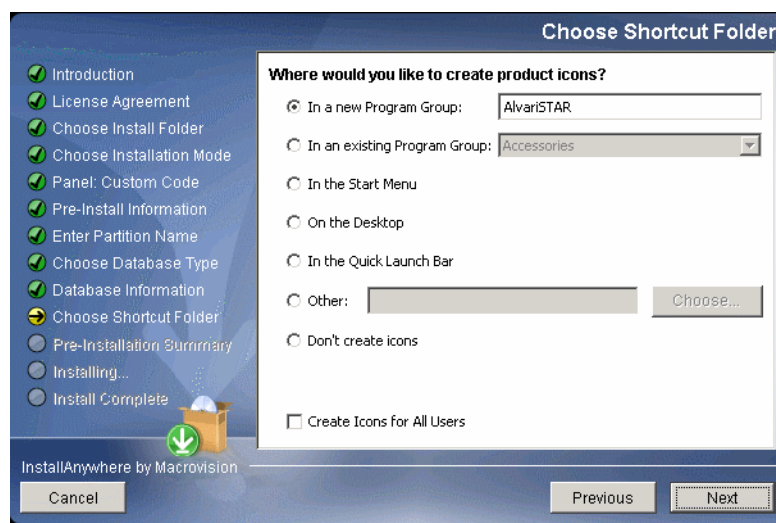


Figure 3-9: Choose Shortcut Folder Window

- 2 Select a location for the product icons and click **Next**.

The *Pre-Installation Summary* window appears.

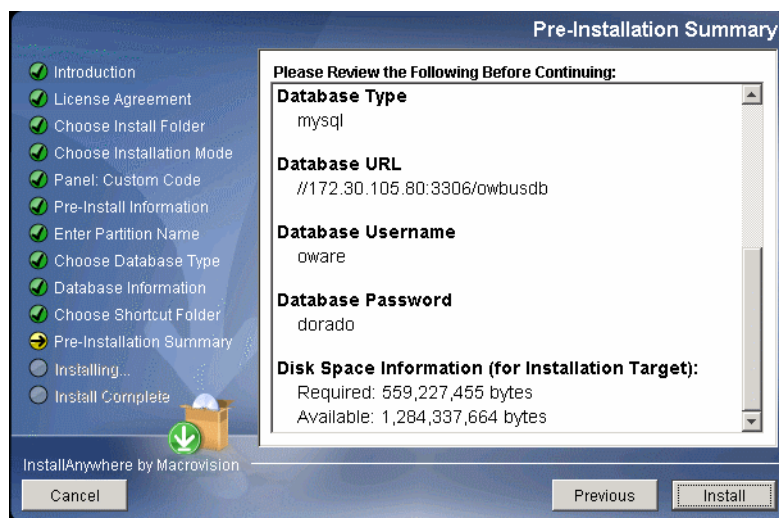


Figure 3-10: Pre-Installation Summary Window

- 3 Review the information and if the definitions are all correct, click **Install**. Click **Previous** to go back to change a definition.

The *Installing Alvaristar* window appears.

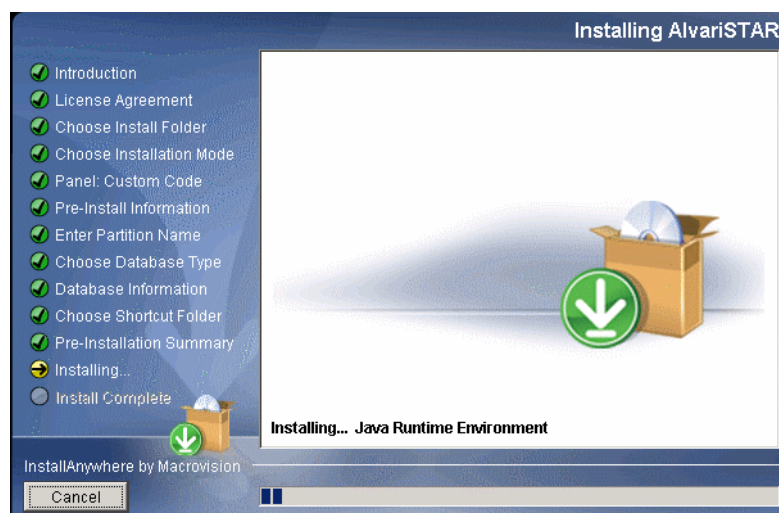


Figure 3-11: Installing AlvariSTAR Window

- 4 The installation process takes several minutes. Click **Cancel** at any stage to cancel the installation. Once AlvariSTAR has been successfully installed the *Install Complete* window appears.

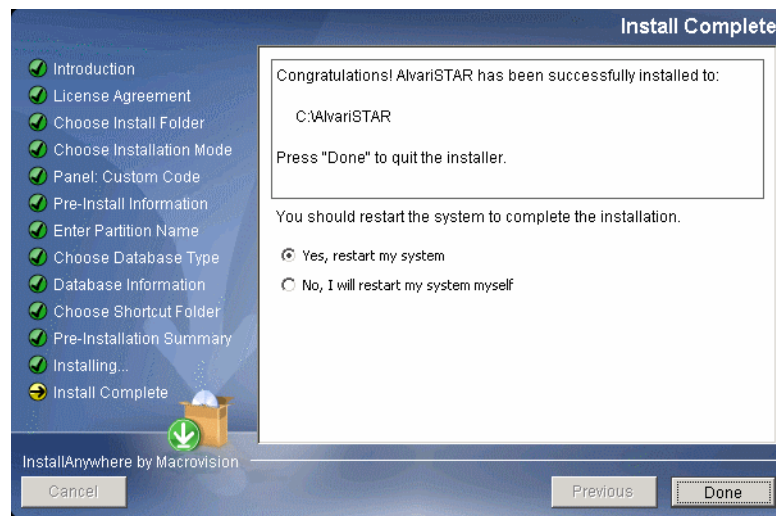


Figure 3-12: Install Complete Window

- 5 Select **Yes, restart the system** and click **Done** in order to initialize the AlvariSTAR service.

After the system restarts, the  **AlvariSTAR Process Manager** icon will be displayed on the System Tray indicating the application server is starting up. The color on the icon will indicate the status of the service: Red when not running, Yellow while starting up; Green when running properly.

3.3.2 Installation with Oracle DB



NOTE

Before installing AlvariSTAR with an Oracle DB, configure the database as described in [Section 2.4](#).

- 1 Select **Oracle** from the *Choose Database Type* window ([Figure 3-8](#)) and click **Next**. The *Database Information* window appears.

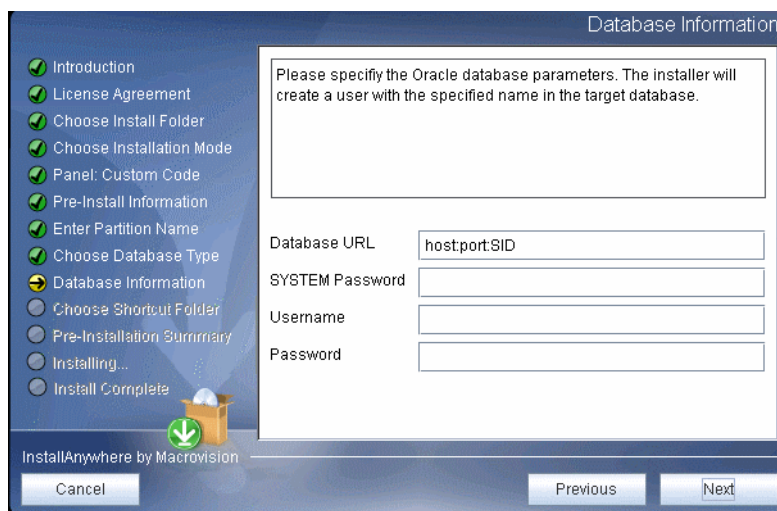


Figure 3-13: Database Information Window

2 Define the parameters as follows:

- ◇ In the **Database URL** field, enter the ID (name or IP) of the computer on which the Oracle DB is running, in the format host:port:SID

where:

- host = host name or IP address of the machine where the Oracle DB is installed. Make sure that the specified database host is accessible. If you entered a hostname rather than an IP address, you should be able to ping that hostname (that is the hostname should be properly resolved by operating system).
- port = port number to access DB (default = 1521)
- SID = Oracle System Identifier.

For example, a database URL may look like one of the following:

- 10.0.22.200:1521:testme
- myhost:1521:testme
- ◇ In the **SYSTEM Password** field, enter the Oracle system password that is necessary in order to create an AlvariSTAR user in Oracle.
- ◇ In the **Username** field, enter a username for the AlvariSTAR schema within the Oracle instance. Do not specify an existing or reserved username (e.g. system, sys, internal, scott).

- ◇ In the **Password** field, enter a password for the user that was defined in the Username field.
- 3 Click **Next** and wait while the system tests the Oracle settings.

The *Choose Shortcut Folder* window appears.

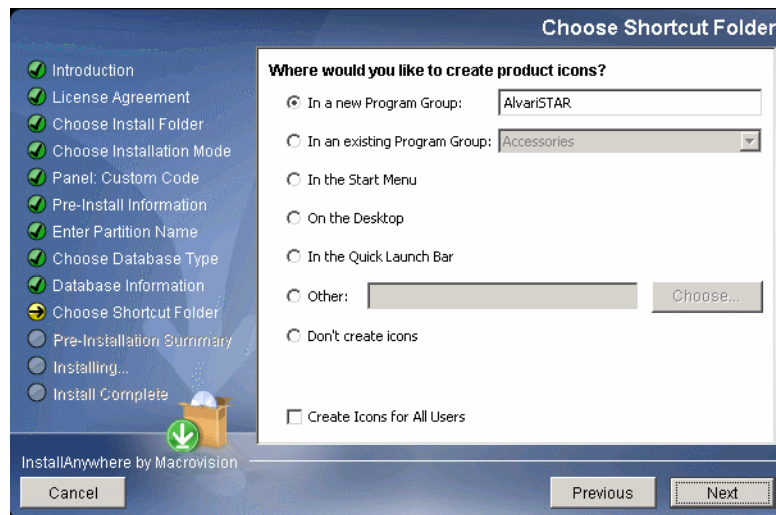


Figure 3-14: Choose Shortcut Folder Window

- 4 Select a location for the product icons and click **Next**.

The *Pre-Installation Summary* window appears.

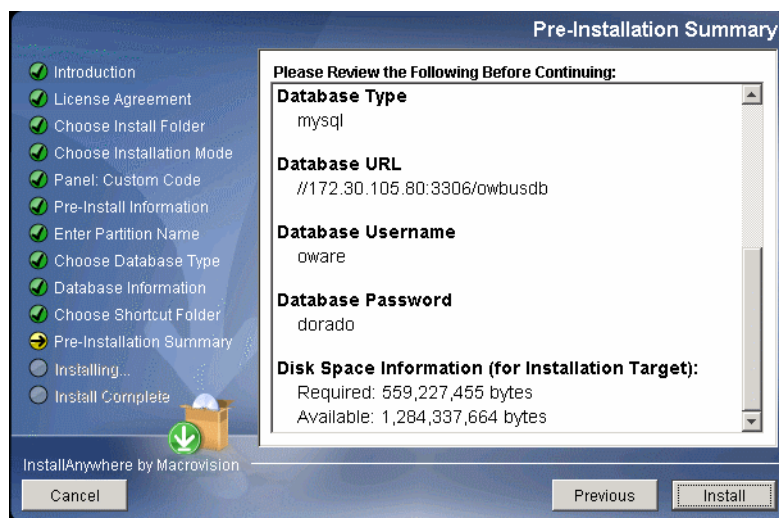


Figure 3-15: Pre-Installation Summary Window

- 5 Review the information and if the definitions are all correct, click **Install**. Click **Previous** to go back to change a definition.

The *Installing Alvaristar* window appears.

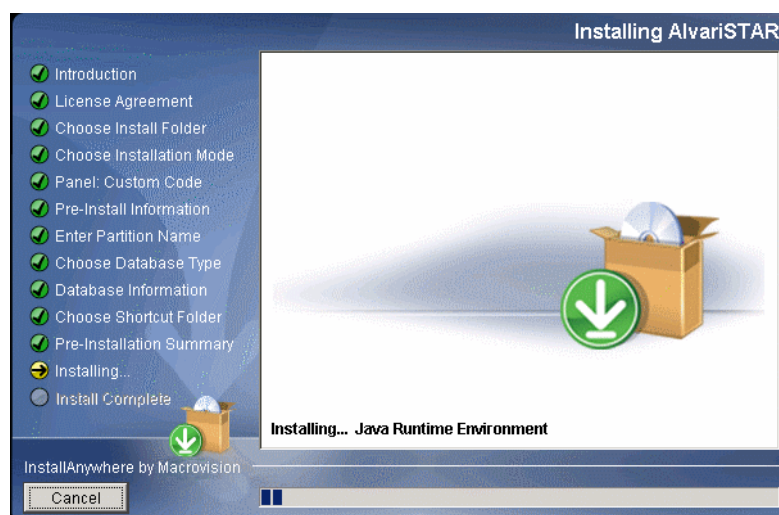


Figure 3-16: Installing AlvariSTAR Window

- 6 The installation process takes several minutes. Click **Cancel** at any stage to cancel the installation. Once AlvariSTAR has been successfully installed the *Install Complete* window appears.

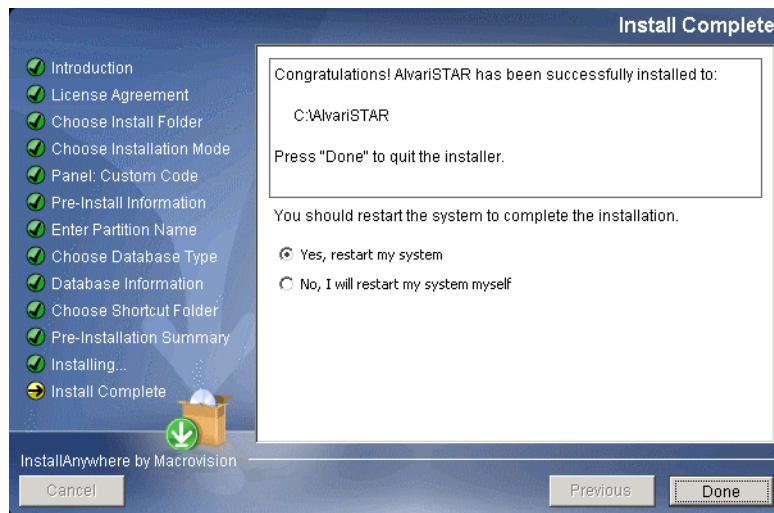


Figure 3-17: Install Complete Window

- 7** Select **Yes, restart the system** and click **Done** to complete the installation.

After the system restarts, the  **AlvariSTAR Process Manager** icon will be displayed on the System Tray indicating that the application server is starting up. The color on the icon indicates the status of the service: Red when not running, Yellow while starting up; Green when running properly.

3.4 Client Installation

It is assumed that you have all the necessary information and that you have performed all the steps described in [Section 2.1.2](#) and [Section 3.2](#).

- 1 In the *Choose Installation Mode* window ([Figure 3-5](#)), select **Client** and click **Next**. The *Pre-Installation Information* window appears.

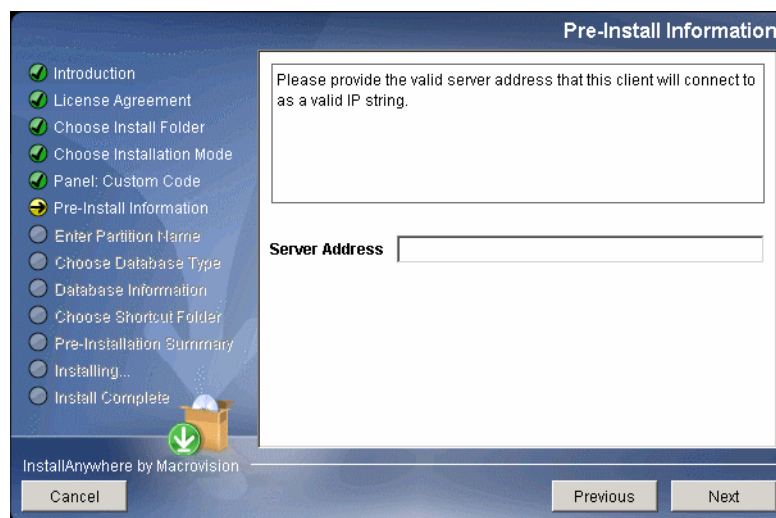


Figure 3-18: Pre-Installation Information Window

- 2 Enter an IP address of the server that the client will connect to and click **Next**. The system tests the connection. When the system has successfully tested the connection the *Connection Successful* window appears.

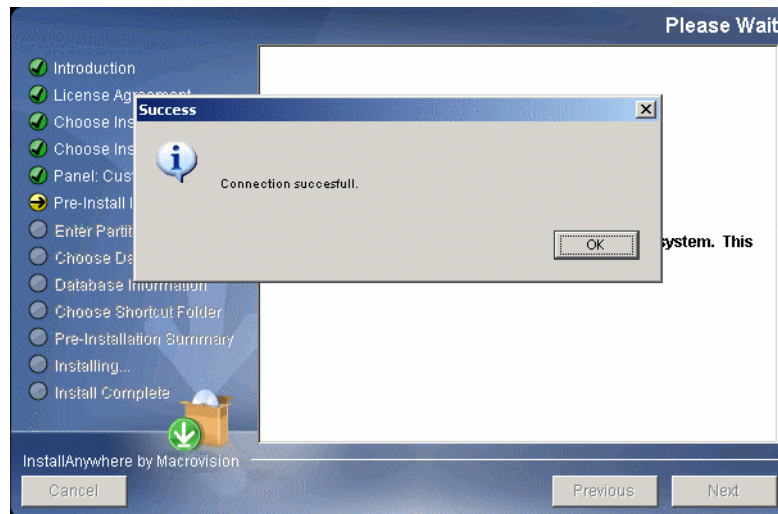


Figure 3-19: Connection Successful Window



NOTE

If the connection fails an error message appears. Click **Back** to enter another IP address or **Continue** to continue without connecting to the server.

- 3 Click **OK** to continue. The *Enter Partition Name* window appears.

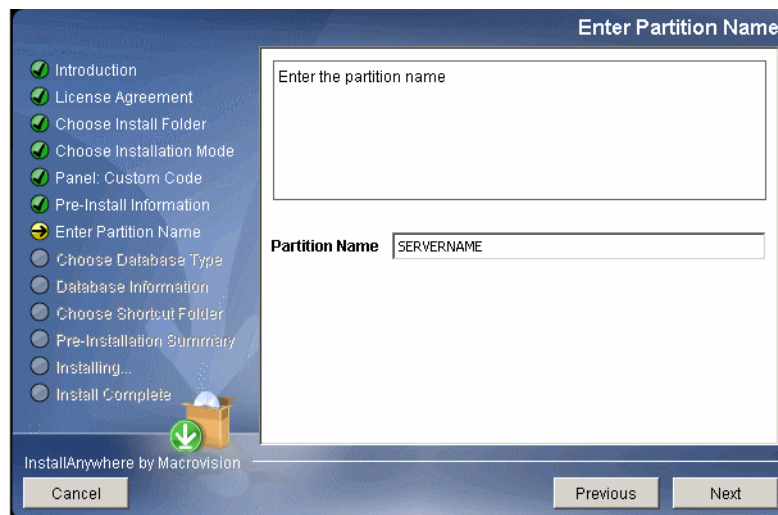


Figure 3-20: Enter Partition Name Window

- 4 Specify a **Partition Name** for the server and click **Next**.

**NOTE**

By default, the name that is displayed in the **Partition Name** field is the host name of machine on which the client is installed. This must be changed to the partition name of the server.

The *Choose Shortcut Folder* window appears.

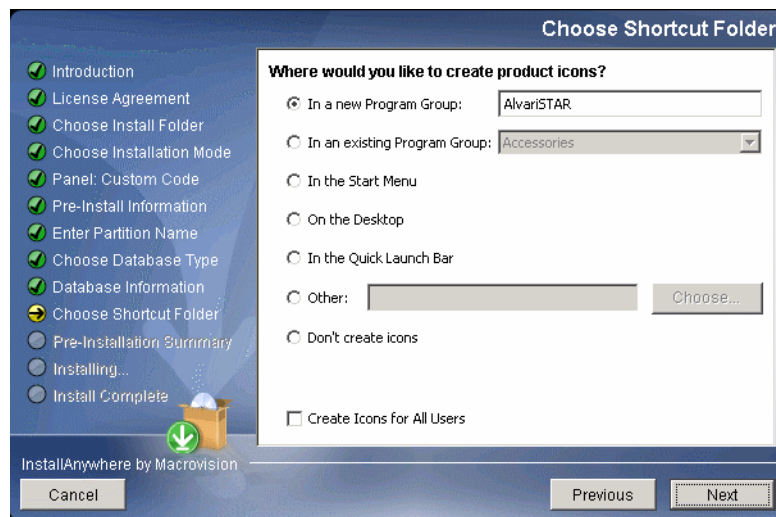


Figure 3-21: Choose Shortcut Folder Window

- 5 Select a location for the product icons and click **Next**.

The *Pre-Installation Summary* window appears.

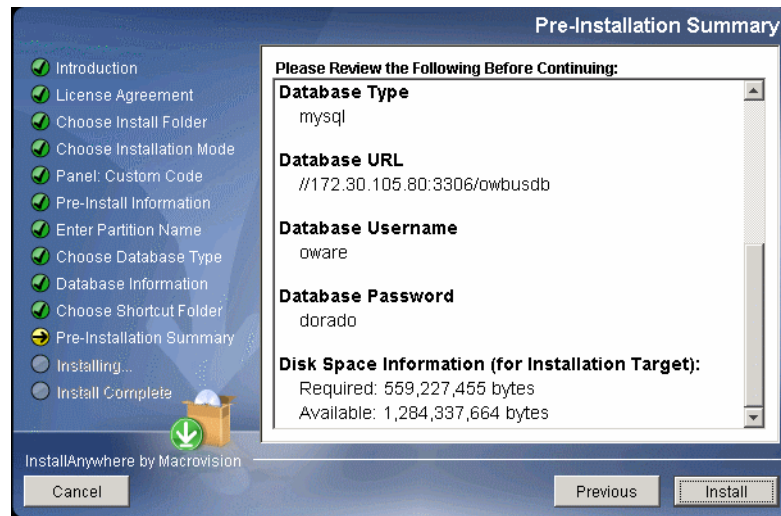


Figure 3-22: Pre-Installation Summary Window

- 6 Review the information and if the definitions are all correct, click **Install**. Click **Previous** to go back to change a definition.

The *Installing Alvaristar* window appears.

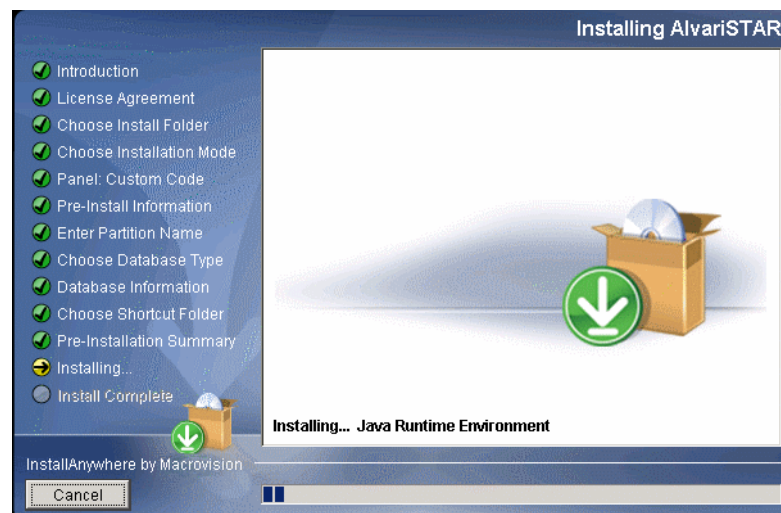


Figure 3-23: Installing AlvariSTAR Window

- 7 The installation process takes several minutes. Click **Cancel** at any stage to cancel the installation. Once AlvariSTAR has been successfully installed the *Install Complete* window appears.

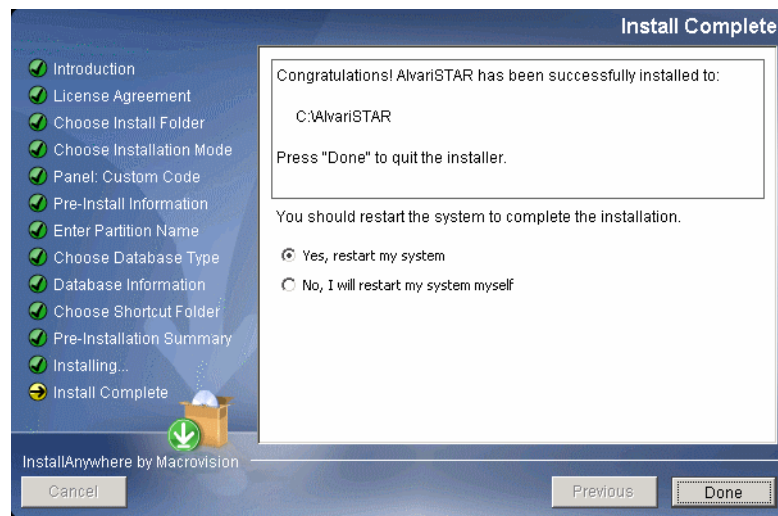
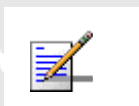


Figure 3-24: Install Complete Window

- 8 Select **Yes, restart the system** and click **Done** to complete the installation.

Chapter 4 - Installation on Solaris OS

This chapter describes how to install AlvariSTAR on Solaris operation systems.



NOTE

Before starting the installation, verify that you have all the necessary information and that you have carried out all the necessary procedures as outlined in [Chapter 2](#).

Also, uninstall any previous installation of AlvariSTAR. To uninstall AlvariSTAR, refer to [Chapter 8](#).

In This Chapter:

- [“Installation” on page 42](#)

4.1 Installation



NOTE

- All the installation steps are saved in a log file <INSTALL_ROOT> AlvariSTAR_InstallLog.log.
- MySQL is NOT supported on installations on Solaris OS. Before installing AlvariSTAR with an Oracle DB, configure the database as described in [Section 2.4](#).

- 1 Log in as the defined **User**. It is recommended that you create a dedicated user to install and own the AlvariSTAR installation.
- 2 To begin the installation:
 - ◇ Run the **install.bin** file directly from the AlvariSTAR Install CD;
 - ◇ For FTP installations, copy the entire installation kit to your hard-drive and run **install.bin**. Note that you might have to set executable permissions on the install.bin file. Do this by using the `chmod a+x install.bin` command in the folder where the installation files reside.
 - ◇ The install.bin file can be found at Disk1/InstData/Solaris/VM/

InstallAnywhere is activated.

- 3 Wait until InstallAnywhere has completed the initialization. An *Introduction* window appears.

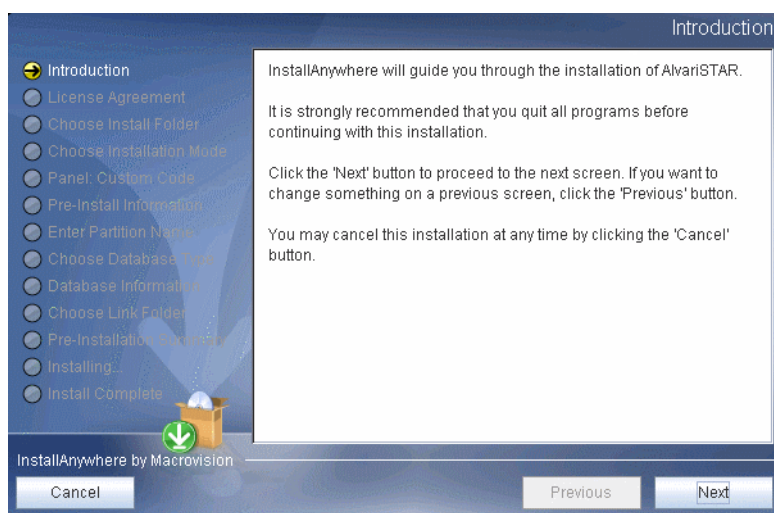


Figure 4-1: Introduction Window

- 4 Review the information and click **Next**.

The *License Agreement* window appears.

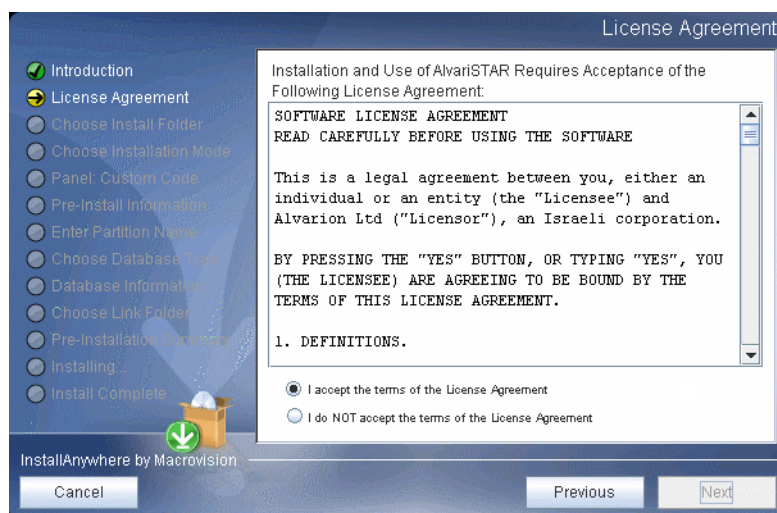


Figure 4-2: License Agreement Window

- 5 Accept the terms of the license agreement and click **Next**.

The *Choose Install Folder* window appears.

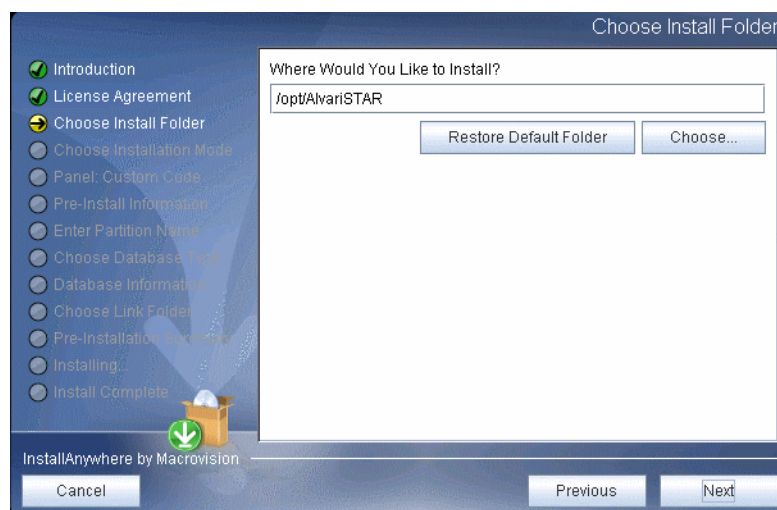


Figure 4-3: Choose Install Folder Window

- 6 To revert to the default destination folder, click **Restore Default Folder**. To change the directory: either enter the complete path or click **Choose** to locate an *existing* directory; then, click **Next**.

Make sure that the user that you are logged on as has full permissions on the folder designated for installation. If the folder does not exist make sure you have create rights on its parent folder.

The *Choose Installation Mode* window appears.

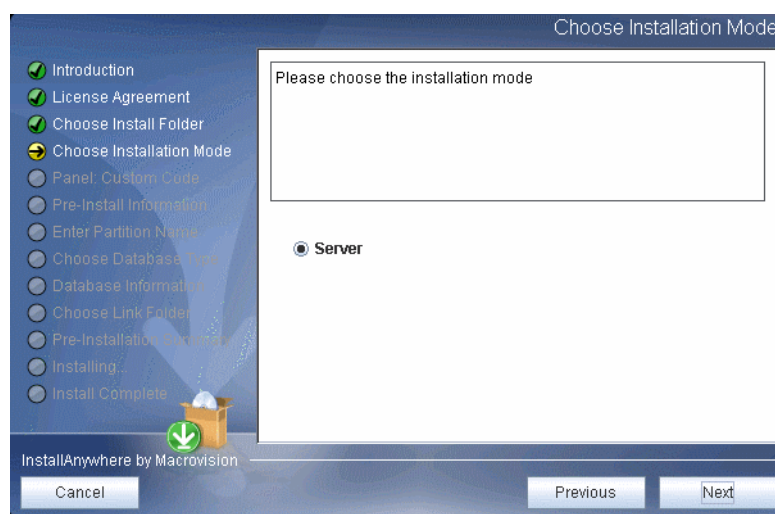


Figure 4-4: Choose Installation Mode Window

- 7 Choose **Server** and click **Next**. The *Select Server IP* window appears.



NOTE

If there is more than one NIC (network interface card) installed in the system, a list of the IP addresses for each NIC appears in the *Select Server IP* window.

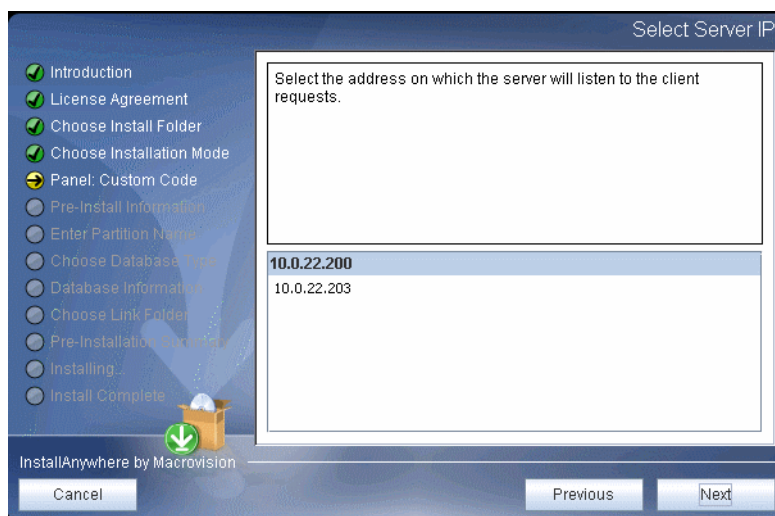


Figure 4-5: Select Server IP Window

- 8 Select the IP address on which the server will listen to client requests and click **Next**.

The *Enter Partition Name* window appears.

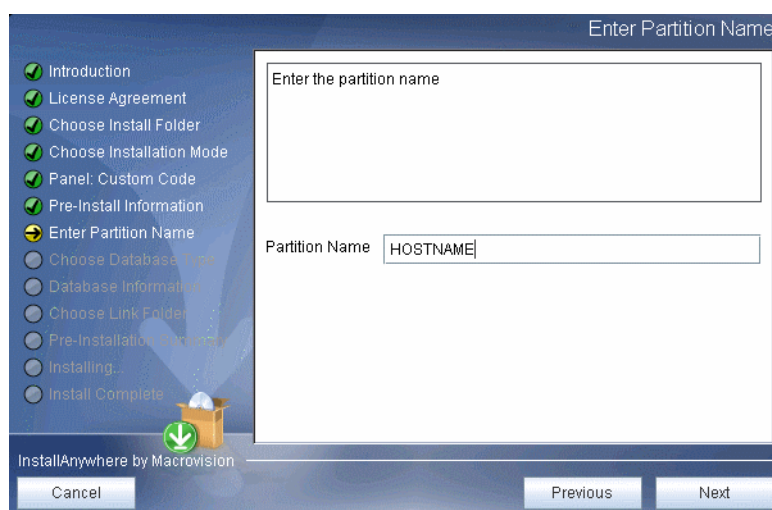


Figure 4-6: Enter Partition Name Window

- 9 Specify a **Partition Name** for the server (by default, the system displays the host name in capital letters). Verify that it is *unique* in the network (the partition name is CASE sensitive). All other AlvariSTAR system elements will refer to this name. Click **Next**.

The *Oracle Database Information* window appears.

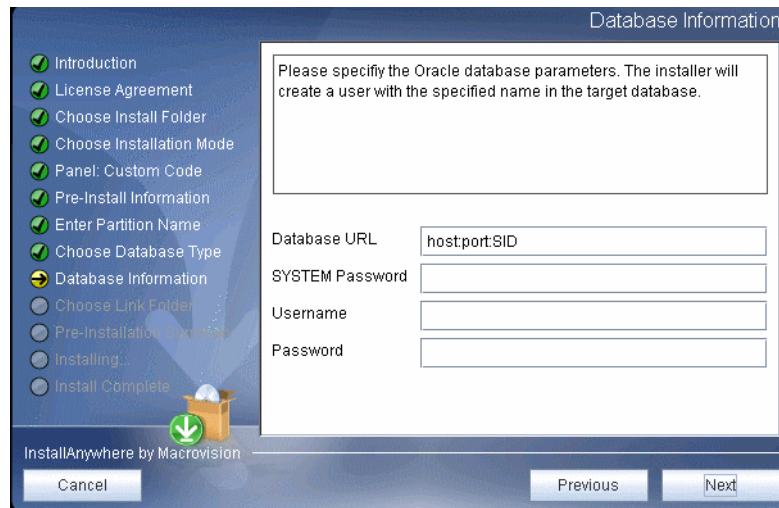


Figure 4-7: Oracle Database Information Window

10 Define the parameters as follows:

- ◇ In the **Database URL** field, enter the ID (name or IP) of the computer on which the Oracle DB is running, in the format host:port:SID

where:

- host = host name or IP address of the machine where the Oracle DB is installed. Make sure that the specified database host is accessible. If you entered a hostname rather than an IP address, you should be able to ping that hostname (that is the hostname should be properly resolved by operating system).
- port = port number to access DB (default = 1521)
- SID = Oracle System Identifier.

For example, a database URL may look like one of the following:

- 10.0.22.200:1521:testme
- myhost:1521:testme
- ◇ In the **SYSTEM Password** field, enter the Oracle system password that is necessary in order to create an AlvariSTAR user in Oracle.
- ◇ In the **Username** field, enter a username for the AlvariSTAR schema within the Oracle instance. Do not specify an existing or reserved username (e.g. system, sys, internal, scott).
- ◇ In the **Password** field, enter a password for the user that was defined in the Username field.

11 Click **Next** and wait while the system tests the Oracle settings.

The *Pre-Installation Summary* window appears.

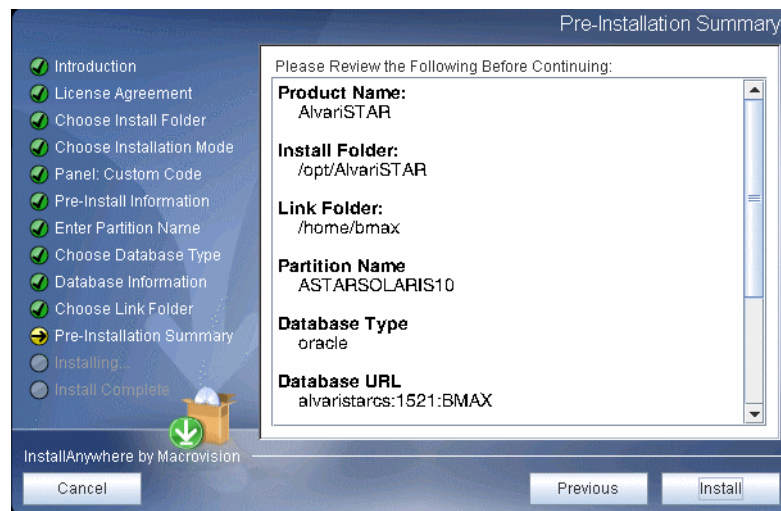


Figure 4-8: Pre-Installation Summary Window

- 12 Review the information and if the definitions are all correct, click **Install**. Click **Previous** to go back to change a definition.

The *Installing Alvaristar* window appears.

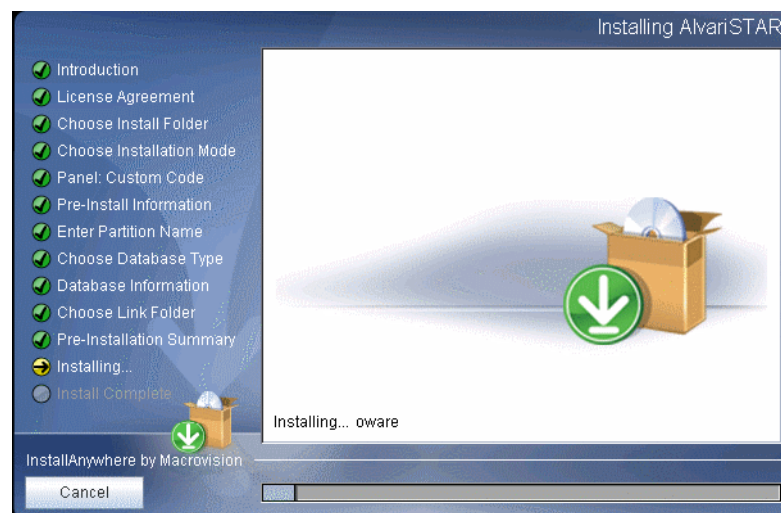


Figure 4-9: Installing AlvariSTAR Window

- 13 The installation process takes several minutes. Click **Cancel** at any stage to cancel the installation. During the last stage of the installation process you will be prompted to run a script command under the user root ([Figure 4-10](#)).

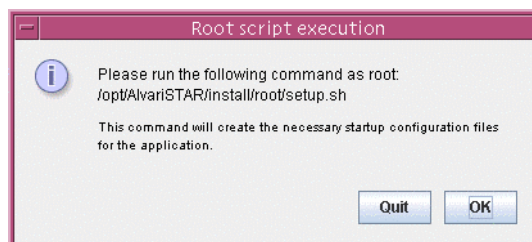


Figure 4-10: Root Script Execution Message

- 14** Log in as user root, run the script and click **OK**.



NOTE

In order to log in as user root, enter: SU - followed by the root password from any Telnet/terminal session.



IMPORTANT

In some x-window emulations, you might encounter difficulties in executing the root script. This is because the window that prompts you to execute the script always remains active. If you have a problem, use one of the following solutions to run the script:

- 1 Minimize the installation screen and open a new telnet console.
- 2 Switch to working with a different CDE workspace, run the script, and then switch back to the original workspace.
- 3 Open a non x-window telnet session (run 'telnet') and execute the script.

The *Install Complete* window appears.

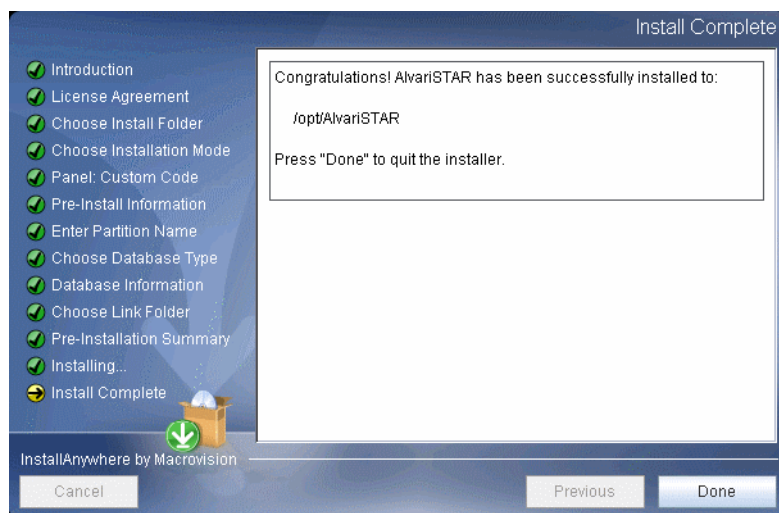


Figure 4-11: Install Complete Window

- 4 Click **Done** to quit the installer.

Chapter 5 - Running Applications

This chapter describes how to run AlvariSTAR.

In This Chapter:

- [“Running AlvariSTAR on Windows OS” on page 52](#)
- [“Running AlvariSTAR on Solaris OS” on page 53](#)

5.1 Running AlvariSTAR on Windows OS

- The **Application Server** runs as a Windows Service. By default the service is configured to run on system initialization. To start or stop the service, select *Control Panel—Administrative Tools—Services* from the **Start Menu**.
- Run **AlvariSTAR Client** from the **Start Menu**.

5.1.1 Manually Starting and Stopping AlvariSTAR

Right-click on the AlvariSTAR icon in the Notification area (on the Status Bar) and select Start/Stop.

5.1.2 Verifying the Application Server State

After installing the AlvariSTAR Server on Windows OS, an icon appears in the Notification area (on the Status Bar). The icon's color indicates the state of the Application Server, as follows:



Application Server is up.



Application Server is down.



Application Server is shutting down/starting up



Service is down.

5.2 Running AlvariSTAR on Solaris OS

The Application Server automatically runs as Daemon.

5.2.1 Manually Starting and Stopping the AlvariSTAR Daemon



NOTE

The AlvariSTAR Setup application automatically configures the system to run the AlvariSTAR application server as a daemon. However it is possible to start and stop the AlvariSTAR daemon manually.

In order to start the AlvariSTAR server daemon after a manual stop use the following command in superuser (root) mode:

```
/etc/rc2.d/S76owprocmon start
```

In order to manually stop the AlvariSTAR server daemon (for maintenance or other tasks) use the following command in superuser (root) mode:

```
/etc/rc2.d/S76owprocmon stop
```



NOTE

In order to log in as user root, enter: SU - followed by the root password from any Telnet/terminal session.

5.2.2 Verifying the Application Server State

In order to confirm that the server is up and running, log in as the user installing AlvariSTAR and perform both of the following steps:

- 1 Use the following UNIX command:

```
ps -aef | grep java | grep server
```

When the server is up the command will display a result detailing the AlvariSTAR process in the operating system. Otherwise, a blank prompt is displayed.

- 2 Open the file:

```
<AlvariSTAR Root>/oware/jboss-3.2.3/server/oware/log/server.log
```

and locate the following line:

```
>>>>> Oware Application Server initialization COMPLETE. <<<<<
```

Chapter 6 - Post Installation Tasks

This chapter describes the tasks to be performed after installation. Make sure you install a Client before performing the post installation tasks.

In This Chapter:

- [“Enabling E-Mail Notification of Alarms & Events” on page 56](#)
- [“Synchronizing the Time Zone Settings” on page 57](#)
- [“Installing the License” on page 60](#)

6.1 Enabling E-Mail Notification of Alarms & Events

The Application Server host must be configured to send SMTP based e-mails to notify operators/system users of alarms and events. The Application Server requires an SMTP proxy server to relay the outgoing e-mails to the public Internet.



To enable the e-mail sending feature:

- 1 Shut down the AlvariSTAR Application Server (refer to [Chapter 5](#)).
- 2 Edit the properties file
`<AlvariSTAR Root>/owareapps/redcell/lib/redcell.properties`
- 3 Modify the variable: `redcell.smtphost` to the host name of the SMTP proxy in your network.
- 4 Modify the variable: `redcell.returnaddress` to the reply e-mail address (if required).
- 5 Start up the AlvariSTAR Application Server (refer to [Chapter 5](#)).



NOTE

SMTP port (25 / TCP) must be reserved for the AlvariSTAR server in order to send the outgoing e-mails to the SMTP proxy.

6.2 Synchronizing the Time Zone Settings

In order for the system to run smoothly, the internal clocks of the client machine and the server machine must be synchronized. After AlvariSTAR is installed you must make sure that both client and server are set to the same GMT time and have the same time zone settings.

6.2.1 Verifying and Setting the Internal Clock



To set the internal clock in Windows systems:

- 1 From the **Start Menu**, select *Control Panel—Date and Time*.
- 2 Select the *Time Zone* tab and select **GMT** from the drop-down list.
- 3 Select the *Date & Time* tab and set the time so that is the same time as GMT.
- 4 Verify that the date is correct.
- 5 Select the *Time Zone* tab, select the regional time from the drop-down list and click **Apply**.



To set the internal clock in Solaris systems:

- 1 Log in as user root.
- 2 Type `date -u`
GMT according to the clock in the computer is displayed in the following format:
`[ [mmdd] HHMM | mmddHHMM [cc] yy] [.SS]`

where mm is the month, dd the day, HH the hour and MM the minutes.
- 3 Verify that this is the same time as GMT and if not, change the parameters accordingly.
- 4 Type `tzselect` and enter the correct regional time.
- 5 After setting the time zone, type `date` to confirm correct time setting.

**NOTE**

In order to log in as user root, enter: SU - followed by the root password from any Telnet/terminal session.

6.2.2 Verifying and Tuning Server and Client Time

Because of potential inconsistencies with daylight saving definitions, after setting the times in the operating system, you must verify that the server application and client application are running on the same time and tune if necessary.



To verify server and client time:

- 1 To verify server time, open the log file
`<AlvariSTAR Root>/oware/jboss-3.2.3/server/oware/log/server.log`
 and check the last date stamp.
- 2 To view the client time, select **Network Scan** from the *Task Manager* window.
 The client time is the time displayed in the *Schedule Editor* (Figure 6-1).

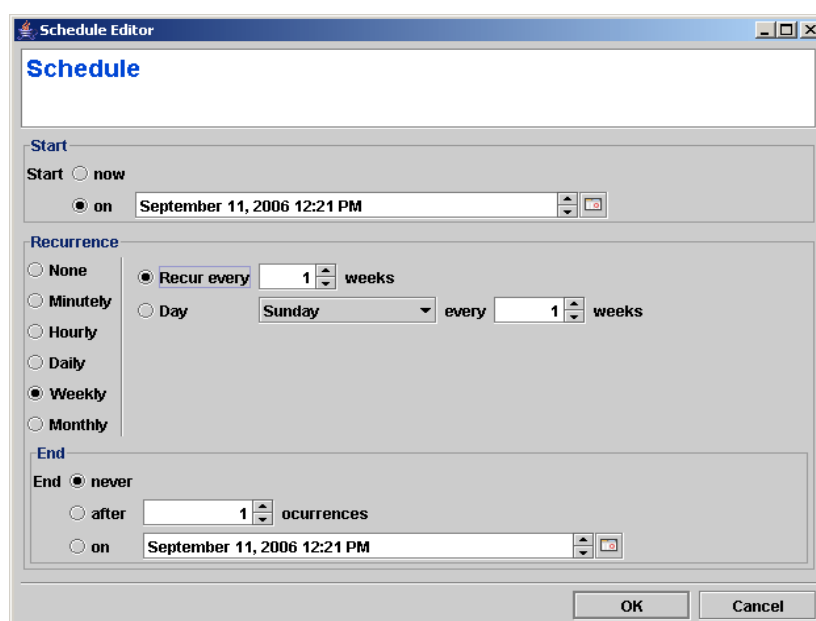


Figure 6-1: Schedule Editor

If after setting the times in the operating system, there are differences between the server application, client application or operating system time, it is necessary to tune the server and client times to override the daylight saving mechanism and eliminate inconsistencies.



To tune the server time:

- 1 In the <AlvariSTAR Root>/oware/bin/startappserver script file, locate the line that starts with:

```
JAVA_OPTS="$SERVER_FLAG -Xrs -Xconcurrentio -XX:MaxPermSize=128m
-ms256m -mx1024m ...
```

- 2 Add the following after mx1024m :

```
-Duser.timezone=GMT+n
```

where n is the local offset from GMT

For example if the local offset from GMT is 2 hours, the line should read:

```
JAVA_OPTS="$SERVER_FLAG -Xrs -Xconcurrentio -XX:MaxPermSize=128m
-ms256m -mx1024m -Duser.timezone=GMT+2 ...
```

- 3 Restart the server.



To tune the client time:

- 1 In the <AlvariSTAR Root>/oware/bin/owlaunch script file, locate the second to last line that starts with:

```
$JAVA -Duser.timezone=GMT+n -Xconcurrentio -mx${MAX_MEM}
${LOCAL_IP_PROP} ...
```

where n is the local offset from GMT

- 2 Make sure that the GMT offset parameter for the Duser timezone (-Duser.timezone=GMT+n) is the same as for the server

NOTE

The location of the parameter in the argument line is crucial.



- 1 Restart the client.
- 2 After restarting the server and the client, verify that the times are now the same on both.

6.3 Installing the License

AlvariSTAR is supplied with a default license that is limited in time and in the number of devices. If you obtained a permanent license from the supplier, refer to Section 5.3 of the *AlvariSTAR User Manual* for instructions on how to install it.

Chapter 7 - System Maintenance

This chapter describes how to configure memory allocation for the AlvariSTAR application server.

In This Chapter:

- [“Memory Tuning” on page 62](#)
- [“Database Management” on page 63](#)
- [“File System Maintenance” on page 67](#)

7.1 Memory Tuning

As with any server system, proper memory tuning is crucial for the overall AlvariSTAR system performance. This section allows you to configure in detail the memory allocation for the AlvariSTAR application server.

To modify memory allocation settings on the application server edit the script file `oware/bin/startappserver` and locate the line that starts with:

```
JAVA_OPTS="$SERVER_FLAG -Xconcurrentio -XX:MaxPermSize=128m -ms256m  
-mx256m
```

The following two options can be used to control the memory allocation process:

-ms	Specify the initial size, in bytes, of the memory allocation pool. This value must be a multiple of 1024 greater than 1MB. Append the letter k or K to indicate kilobytes, or m or M to indicate megabytes. Examples: -ms6291456 -ms6144k -ms6m
-mx	Specify the maximum size, in bytes, of the memory allocation pool. This value must a multiple of 1024 greater than 2MB. Append the letter k or K to indicate kilobytes, or m or M to indicate megabytes. The default value is 64 MB. Examples: -mx83886080 -mx81920k -mx80m

7.2 Database Management

The AlvariSTAR is heavily dependent on the database for the most basic operations. A database crash will cause the system to stop functioning and may cause loss of data.

Although most of the operational data is kept in the Base Station's internal database, the following data is kept only in the AlvariSTAR database:

- NMS security setting (User, Groups, permissions etc.)
- IP list for the discovered network + SNMP details
- Location schema and the correlated maps files
- Contact information
- PM collection tasks and data
- Configuration backup files
- NMS license keys
- Trap settings (NMS severity, filters, views, northbound etc.)
- Traps history.

7.2.1 Oracle Database Backup

For Oracle fault tolerance, back up your Oracle database. To do this, we recommend using Oracle's Recovery Manager (RMAN) backup utility. This is an Oracle tool that lets you back up, copy, restore, and recover data files, control files, and archived redo logs. It is included with Oracle server and does not require a separate installation.

7.2.2 MySQL Backup/Restore

The Backup/Restore procedures described are based on the standard tools provided by MySQL distribution.

The basic backup procedure is mysqldump.exe. The backup files created should be saved on separate media/storage for increased preservation. For further details go to <http://dev.mysql.com/doc/refman/4.1/en/mysqldump.html>.

There are two main backup methods:

- Full backup - backups all the data every time the process is executed.
- Incremental backup - backups all the data once, and then backups only the changes made in the DB since the last full backup

This section deals with the full backup. For more information on the increment backup see: <http://dev.mysql.com/doc/refman/4.1/en/mysqlbinlog.html>.

7.2.2.1 Examples

Example 1:

The following is an example of a DOS batch file that can be used to back up the database and thus provide the means to successfully restore:

```
::@ECHO OFF

:: Initializing

:: MySQL user & password
SET sMySQLAccess=-uoware -pdorado

:: databases to backed up
SET sDatabases=--databases bwanms owbusdb

:: full path for MySQL executables
SET
    sMySQLBinPath=%OWARE_USER_ROOT%\oware3rd\mysql\mysql-4.1.16-win32\bin\

:: directory for backup files
SET sBackupFileDir=C:\

:: generate an exact timestamp to be used a unique qualifier for the
    backup file name
```

```

SET sMySQLCMD=%sMySQLBinPath%mysql %sMySQLAccess% -N -s -D mysql -e
SET sSQL=select date_format(now(), '%Y%m%d_%H%i%s');
%sMySQLCMD%"%sSQL%">NUL

IF NOT %ERRORLEVEL%==0 EXIT /B %ERRORLEVEL%


FOR /F "tokens=1* delims= " %%i in ('%sMySQLCMD%"%sSQL%") do set
    STS=%%i

echo Started Backup Process ....>%BackupFileDir%BkpLog_%STS%


:: executing the backup command line
SET sBackupCMD=%sMySQLBinPath%mysqldump.exe %sMySQLAccess%
    %sDatabases% --verbose --quick --add-drop-database
    --create-options --flush-logs --master-data
    --single-transaction --result-file=

%sBackupCMD%sBackupFileDir%BkpFile_%STS%
    1>%sBackupFileDir%BkpLog_%STS% 2>&1

IF NOT %ERRORLEVEL%==0 EXIT /B %ERRORLEVEL%

echo Terminated Backup Process ....>%sBackupFileDir%BkpLog_%STS%

```

The example includes the backup command line, executes a full backup using mysqldump, and delivers a backup file and a backup log. The backup file name and the log file name include a time stamp string and are unique, making it easier to maintain different backup files and logs. Both the backup and the log files are created in C:\.

The user can add more functionality according to organizational backup standards, such as notification of backup process, automatic compression, automatic archiving of the backup files and automatic re-cycling of the files.

Example 2:

To recover a database use the Mysql command with the last full backup file. For example :

```
mysql -uoware -pdorado<C:\BkpFile_20060727_191835
```

restores the database that was backed up on 27/07/2006 19:18

7.3 File System Maintenance

The AlvariSTAR system, during its normal activities, generates log files and DAP backup files. The AlvariSTAR file system should not exceed 90% space utilization. It is up to the NOC to monitor the AlvariSTAR file system and delete, compress, or back up these files.

Log file: AlvariSTAR operates in a "Rolling log" method, every day (at midnight) or every restart of the application server, the log closes (with a timestamp) and a new one is created (named serevr.log).

If the system experiences low disk space, the older logs should be moved or deleted.

The log files are located in:

<AlvariSTAR Root>/oware/jboss-3.2.3/server/oware/log/

DAP files: DAP files (event and audit logs) are generated by AlvariSTAR and stored by default in the same parent directory as the application server.

The default location of the DAP files is:

<AlvariSTAR Root>/filesystem/archive

Even though the files are compressed (zipped), they can consume a lot of space after several months of system operation. In case of low disk space, these files should be moved to a different location. It is possible to configure the DAP process to save the files in a different location at creation.

Chapter 8 - Uninstalling AlvariSTAR

If you want to change the AlvariSTAR installation, the current installation must first be removed according to the procedures described in this chapter, and the new configuration installed.

This version of AlvariSTAR does not support the addition or removal of specific components on an existing installation.

This chapter describes how to uninstall AlvariSTAR.

In This Chapter:

- [“Uninstalling AlvariSTAR” on page 70](#)
- [“Removing AlvariSTAR Data from Oracle” on page 76](#)

8.1 Uninstalling AlvariSTAR

8.1.1 Windows OS



NOTE

Before uninstalling AlvariSTAR, it is recommended to backup the database and close the application.



To uninstall AlvariSTAR:

- 1 From the *Control Panel*, select the **Add/Remove Programs** utility.
- 2 Locate **AlvariSTAR** and click the **Uninstall** button.

The *Uninstall AlvariSTAR* window appears.

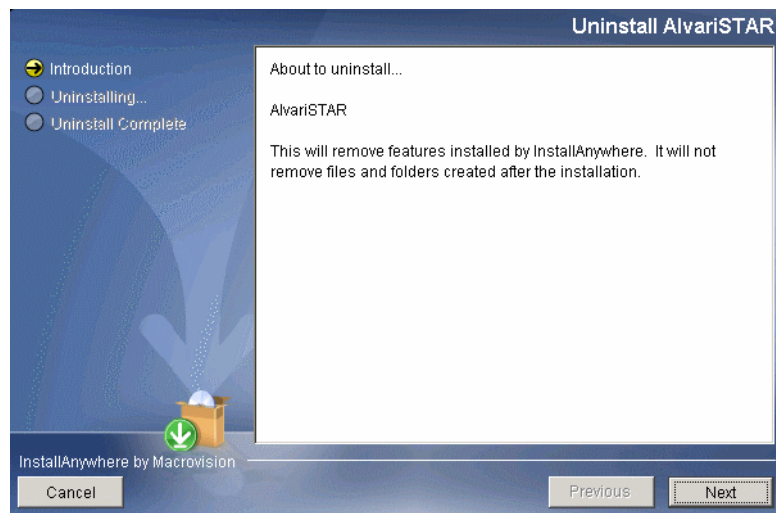


Figure 8-1: Uninstall AlvariSTAR Window

- 3 Click **Next**. The *Uninstall Options* window appears.

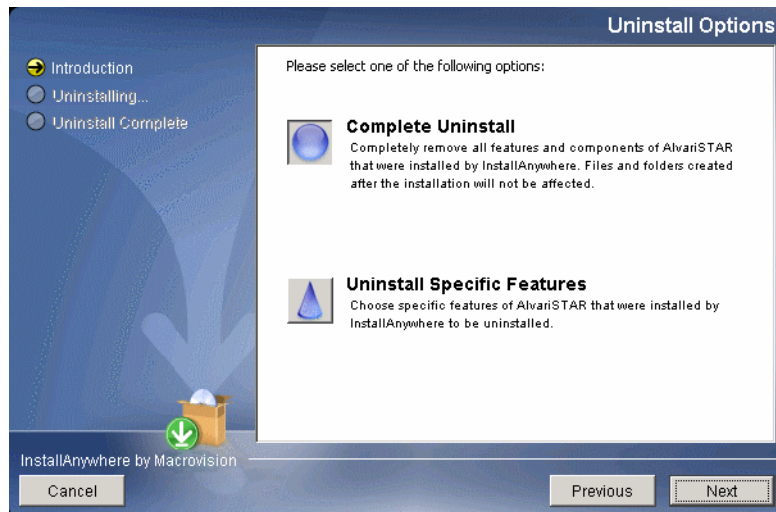


Figure 8-2: Uninstall Options Window

- 4 Select **Complete Uninstall** and click **Next**. Messages relating to the uninstall procedure are continuously displayed in the *Uninstall AlvariSTAR* window.

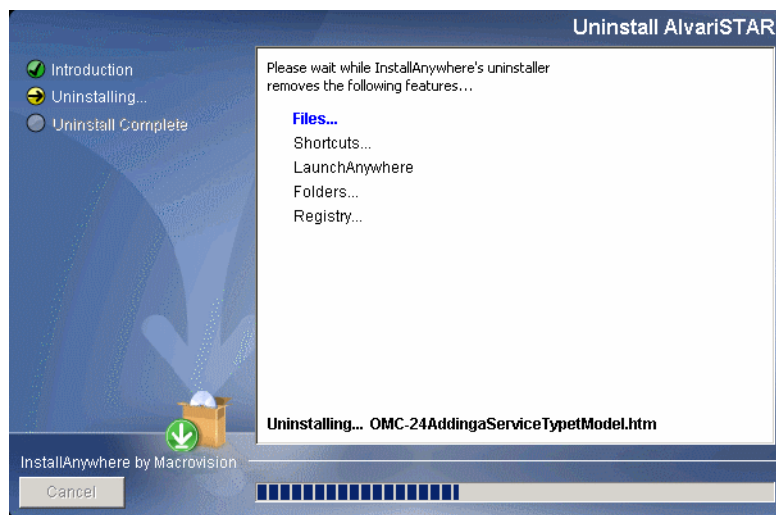


Figure 8-3: Uninstall AlvariSTAR Window

- 5 When all features have been removed the *Uninstall Complete* window appears.

**NOTE**

When uninstalling an AlvariSTAR server, you will be prompted to confirm the deletion of files that were installed during the installation process. Click **Yes** to confirm the deletion.

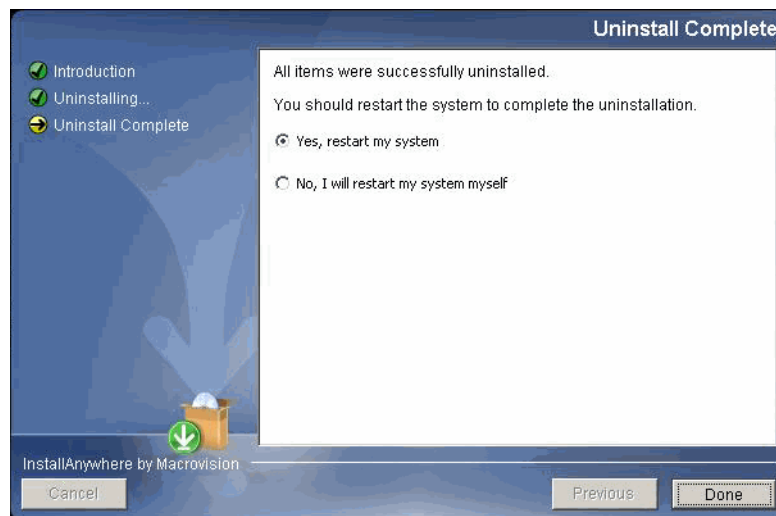


Figure 8-4: Uninstall Complete Window

- 6 Select **Yes, restart the system** and click **Done**.

8.1.2 Solaris OS



NOTE

Before uninstalling AlvariSTAR, it is recommended to backup the database.

- 1 Make sure the AlvariSTAR server is not running (see [Section 5.2](#)).
- 2 Open a Console session and logon as the same **User** who originally installed and owns the AlvariSTAR installation (see [Section 4.1](#)).
- 3 Go to the directory on which AlvariSTAR was installed, e.g.,
/opt/AlvariSTAR/Uninstall_AlvariSTAR/

where **/opt/AlvariSTAR/** is the default directory on which AlvariSTAR was installed.

- 4 Run the script: **Uninstall_AlvariSTAR**

The *Uninstall AlvariSTAR* window appears.

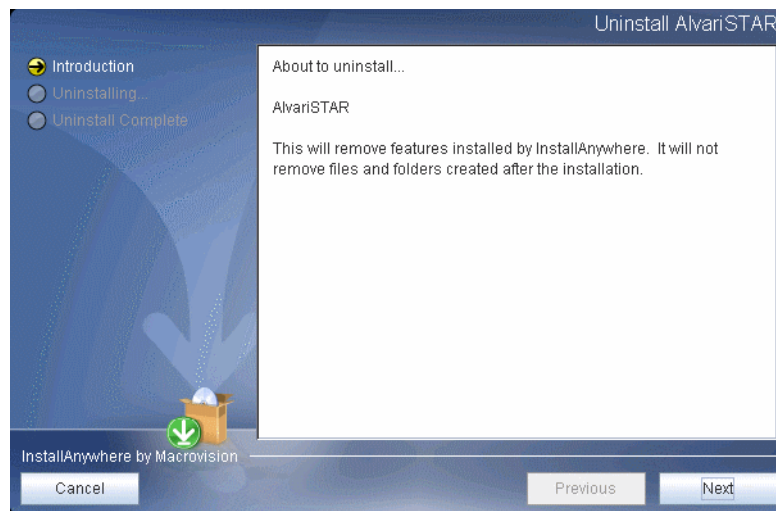


Figure 8-5: Uninstall AlvariSTAR Window

- 5 You will be prompted to run a command as root to remove the remaining files. Click **OK** after running the command.

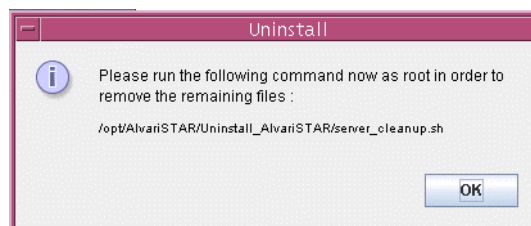


Figure 8-6: Confirm Removal of Remaining Files

IMPORTANT



In some x-window emulations, you might encounter difficulties in executing the root script. This is because the window that prompts you to execute the script always remains active. If you have a problem, use one of the following solutions to run the script:

- 1 Minimize the installation screen and open a new telnet console.
- 2 Switch to working with a different CDE workspace, run the script, and then switch back to the original workspace.
- 3 Open a non x-window telnet session (run 'telnet') and execute the script.
- 4 Click **Next**. The *Uninstall Options* window is displayed.

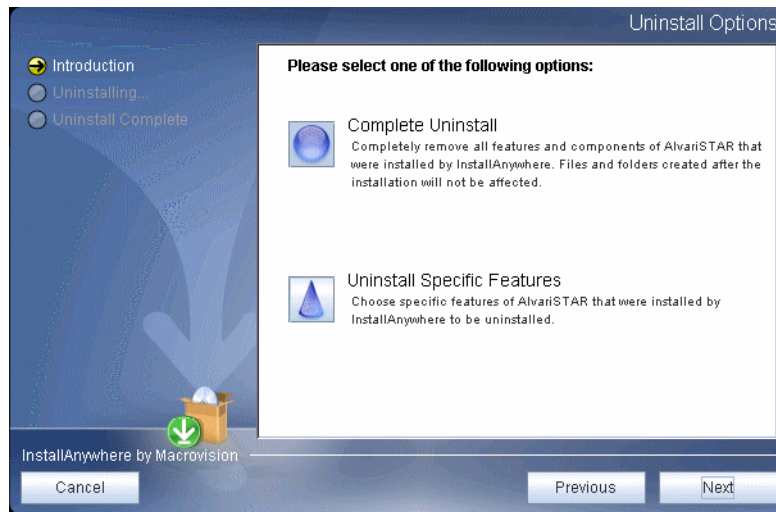


Figure 8-7: Uninstall Options Window

- 5 Select **Complete Uninstall** and click **Next**. Messages relating to the uninstall procedure are continuously displayed in the *Uninstall AlvariSTAR* window.

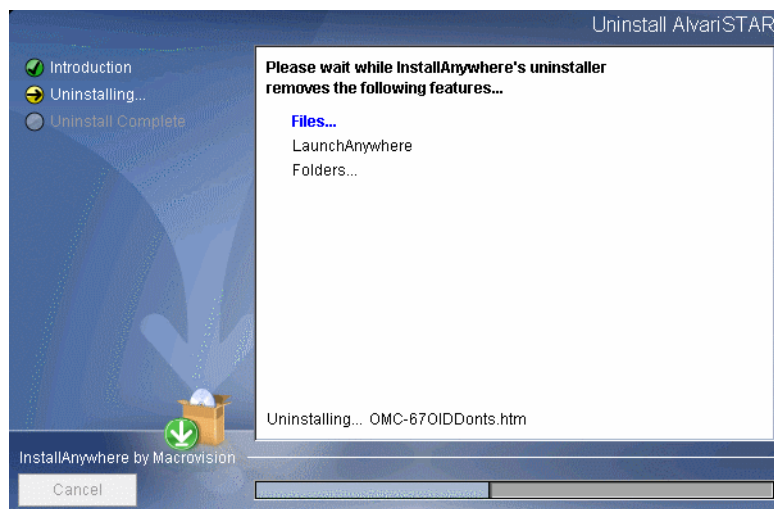


Figure 8-8: Uninstall AlvariSTAR Window

- 6 You will be prompted to confirm the deletion of files that were installed during the installation process. Click **Yes** to confirm the deletion.

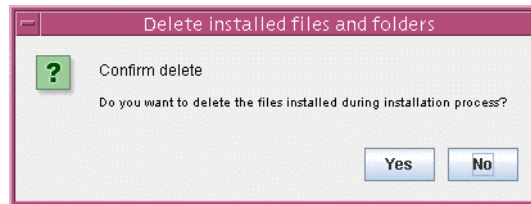


Figure 8-9: Confirm Deletion of Files and Folders

- 7 When all features have been removed the *Uninstall Complete* window appears.

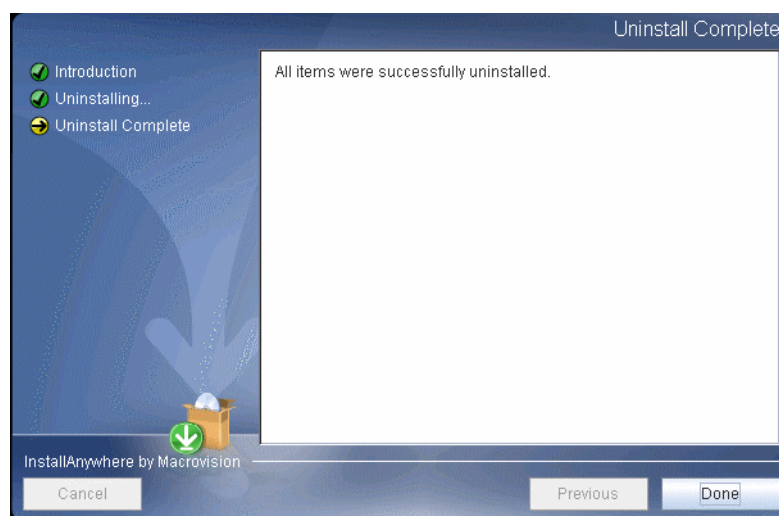


Figure 8-10: Uninstall Complete Window

- 8 Click **Done**.

8.2 Removing AlvariSTAR Data from Oracle

For an Oracle installation, the AlvariSTAR uninstaller does not remove any of the AlvariSTAR data from the Oracle database used by the system. To remove the data without having to remove the whole Oracle instance do one of the following:

■ If you use Oracle DBA Studio:

- 1 Log on to the database using the system account in the Oracle DBA Studio application (see the Oracle documentation for more information on the DBA Studio tool).
- 2 Locate the user created by the AlvariSTAR installation under the Security > Users tree entry. Right click on the user and select Remove... Confirm the deletion of all owned data.
- 3 Locate the owrole role under the Security > Roles tree entry. Right click on it and select Remove...
- 4 Locate the AlvariSTAR tablespaces under the Storage > Tablespaces tree entry: owdata01 and all tablespaces starting with oware_ and fault_. Individually delete the tablespaces.

■ If you use SqlPlus to manage the database:

- 1 Log on to the database using the system account.
- 2 Execute the following command to drop the user created by the AlvariSTAR installation and all its associated data:

```
drop user <AlvariSTAR user> cascade;
```

- 3 Execute the following command to delete the OWROLE role:

```
drop role OWROLE;
```

- 4 Execute the following commands to delete all the AlvariSTAR tablespaces:

```
drop tablespace OWDATA01;
```

```
drop tablespace OWARE_SVC_JOBSTATUSMSG_TS;
```

```
drop tablespace OWARE_SVC_MSGCAT_TS;
```

```
drop tablespace OWARE_SVC_LOGMSG_TS;
```

```
drop tablespace FAULT_AS_EVENTINFO_TS;  
drop tablespace FAULT_AS_EVENTINFO_COLL_TS;  
drop tablespace FAULT_AS_EVENTINFO_IDX_TS;  
drop tablespace OWPMCOLL_TS;  
drop tablespace OWIDX01;
```

